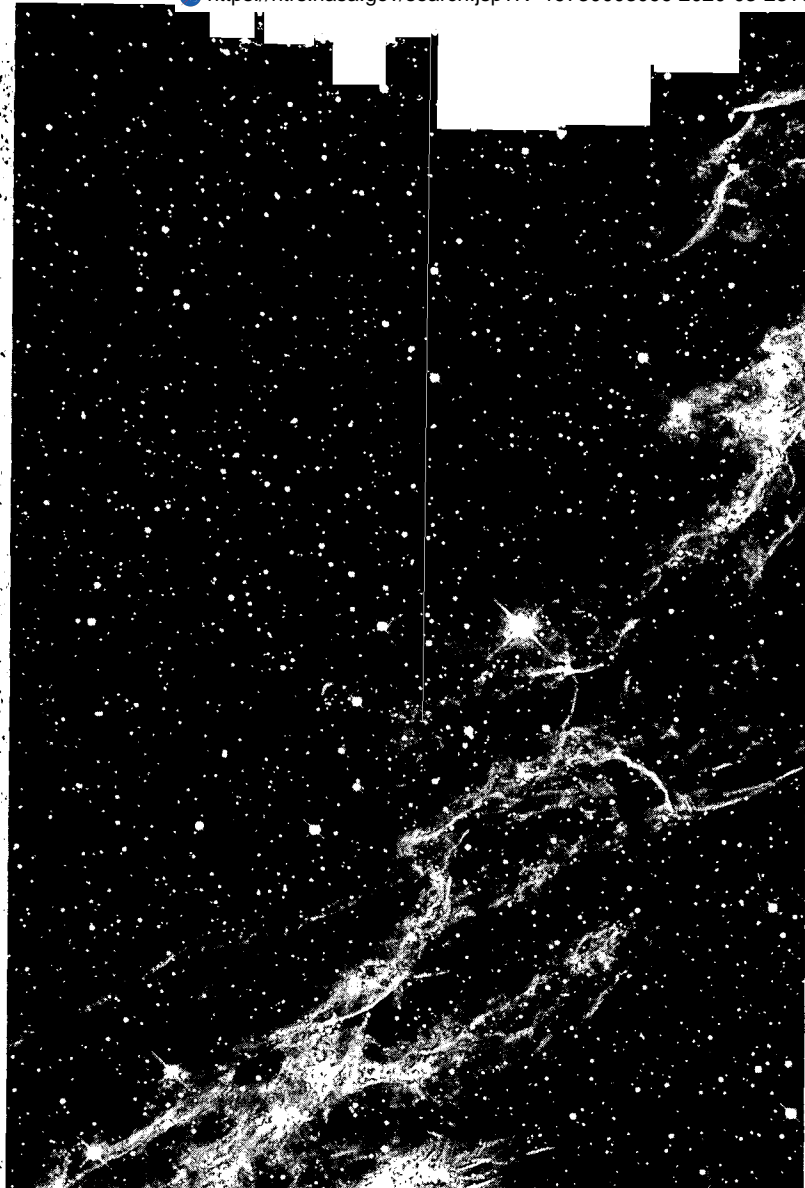




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(NASA-CR-129162) PLANETARY MISSION

N73-11826

HANDBOOK. APPENDIX A: GRAPHICAL

TRAJECTORY DATA (IIT Research Inst.) Jul.

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Technical Memorandum No. T-32

PLANETARY MISSIONS HANDBOOK

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(APPENDIX A: GRAPHICAL
TRAJECTORY DATA)

Technical Memorandum No. T-32

PLANETARY MISSION HANDBOOK

(APPENDIX A: GRAPHICAL
TRAJECTORY DATA)

by

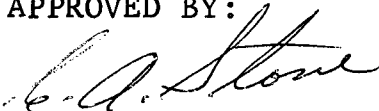
Astro Sciences
IIT Research Institute
Chicago, Illinois 60616

for

Planetary Programs
Office of Space Sciences
NASA Headquarters
Washington, D. C.

Contract No. NASW-2144

APPROVED BY:



C. A. Stone, Director
Physics Research Division

July 1972

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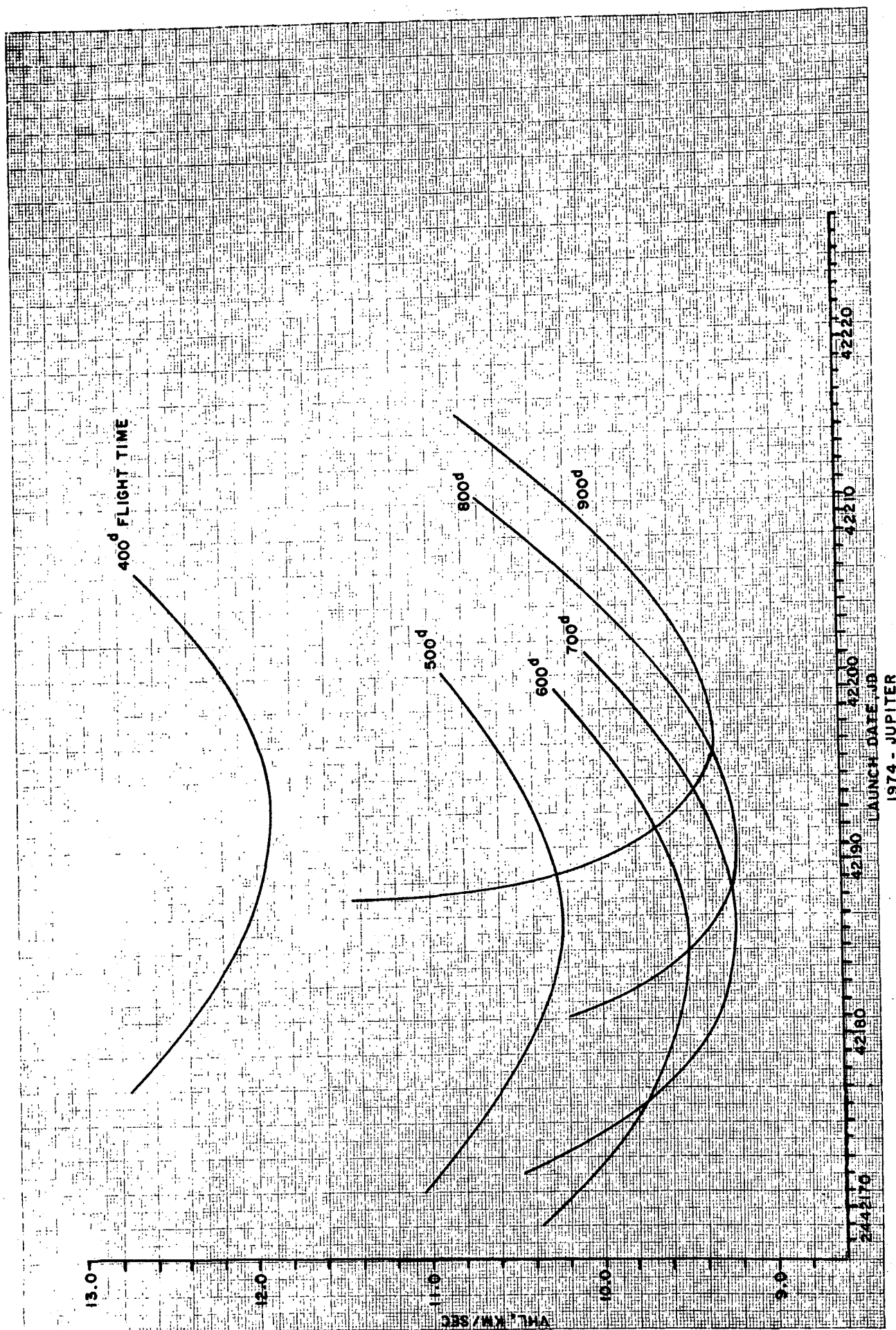
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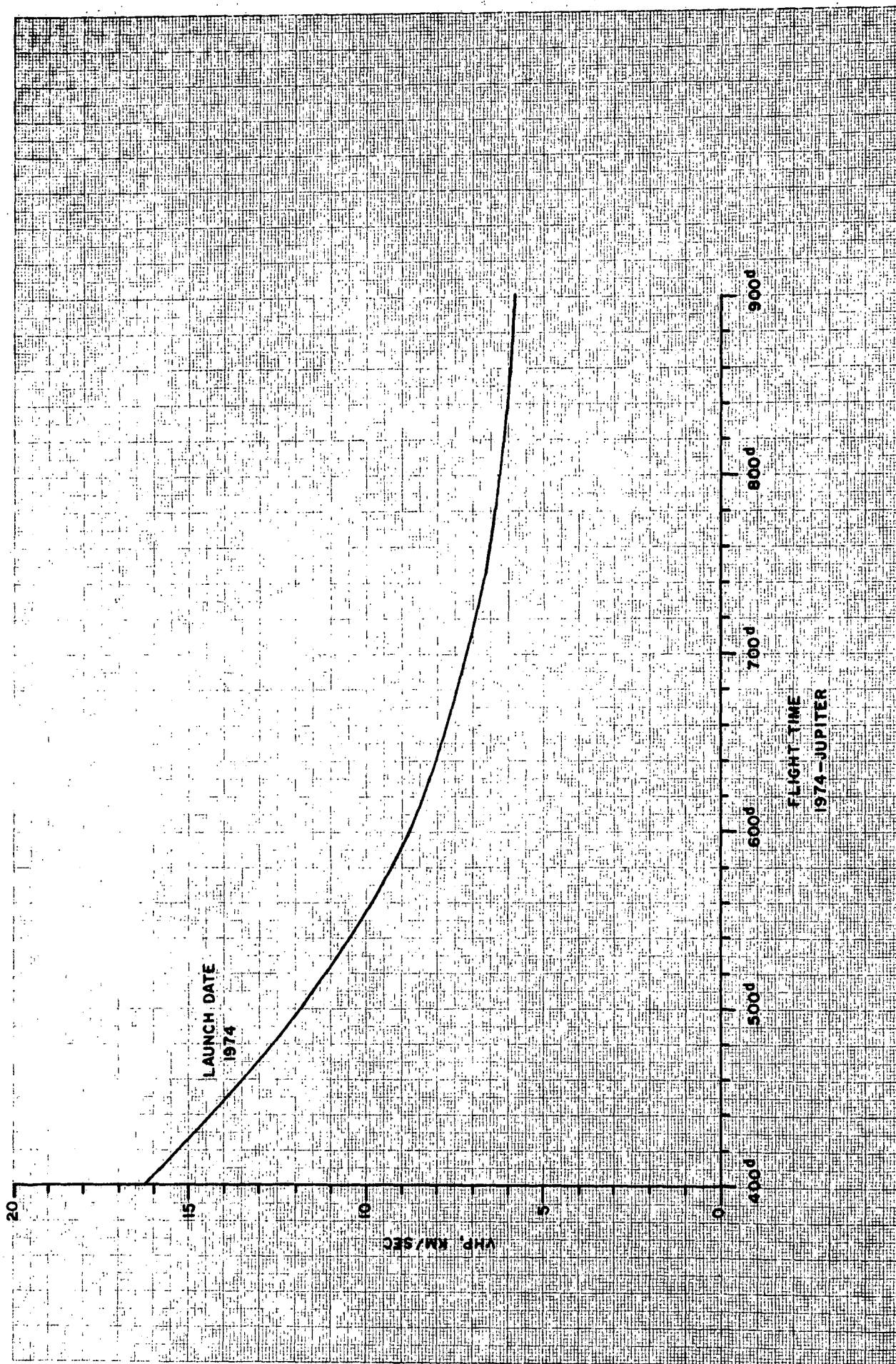
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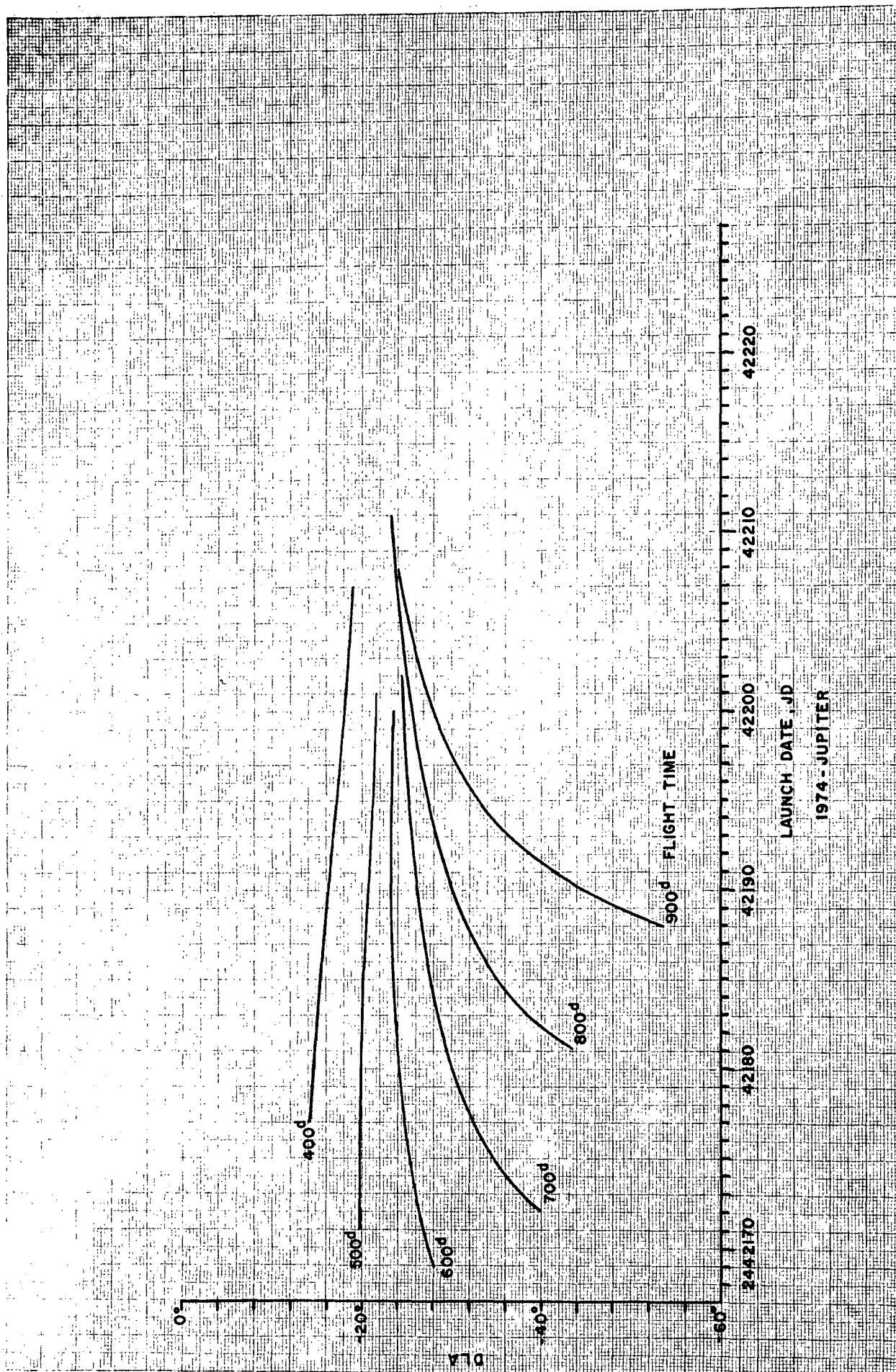
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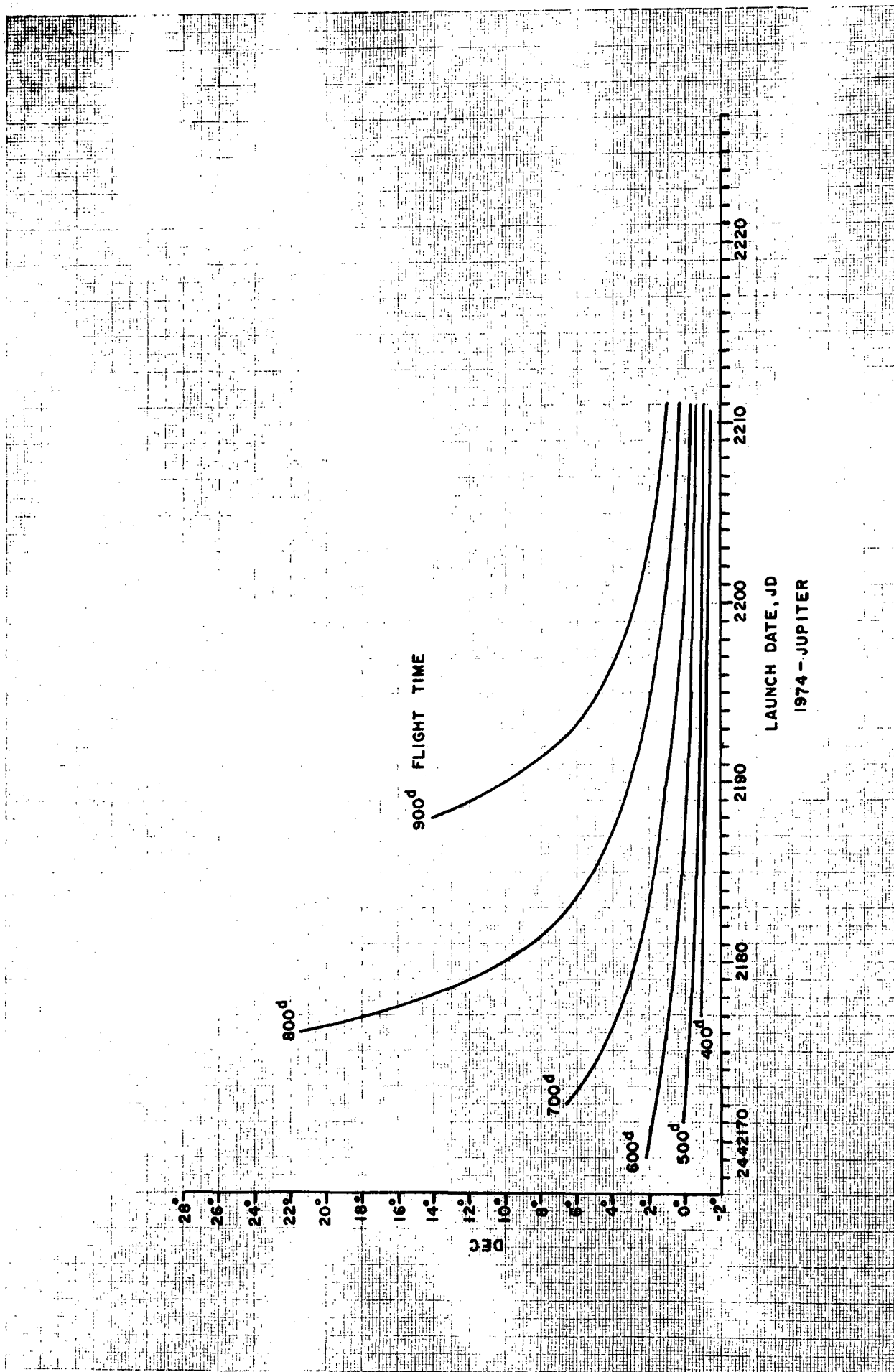
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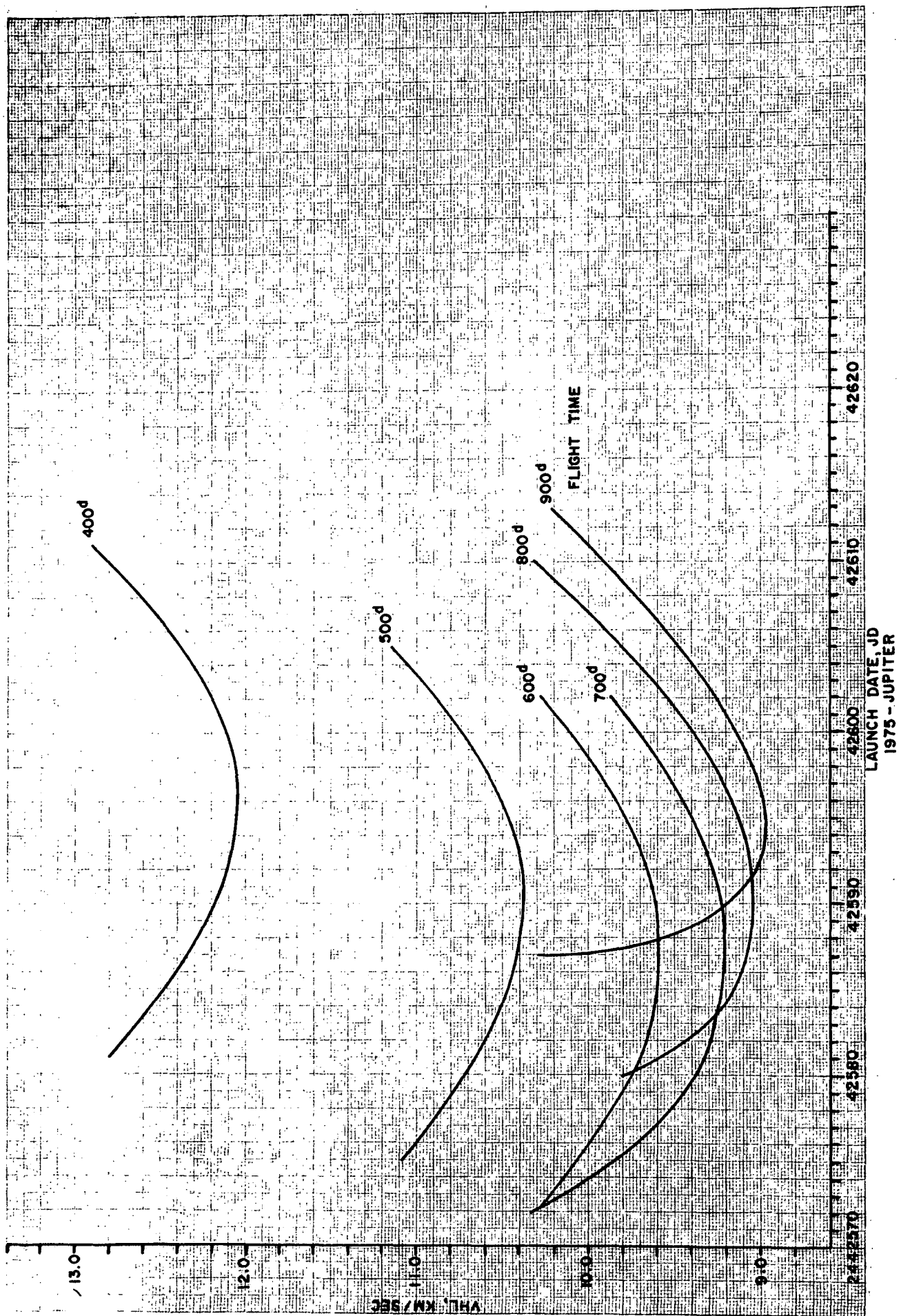
This appendix contains the graphical data for Type I ballistic transfers to the planets Jupiter (1974 to 1986), Saturn (1976 to 1986) and Uranus (1985). There are four graphs for each launch opportunity, namely the hyperbolic excess speed at earth departure (VHL), the hyperbolic excess speed at planet arrival (VHP), the declination of the hyperbolic departure asymptote (DLA), and the declination of the hyperbolic approach asymptote (DEC). VHL is the basic measure of launch vehicle payload performance, and DLA is needed to assess payload degradation due to non-optimum launch conditions. For orbiter missions the VHP is needed to determine what velocity increment is required for orbit capture. While DEC is not used to generate performance data, it is presented for completeness and is an important parameter in designing equatorial orbital missions. VHL, DLA and DEC are each plotted against launch date for either a fixed arrival date or a fixed flight time. VHP is such a weak function of launch date that it can be plotted directly as a function of flight time. In some cases VHL and VHP are given in Emos units, the Earth's mean orbital speed which is 29.785 km/sec.

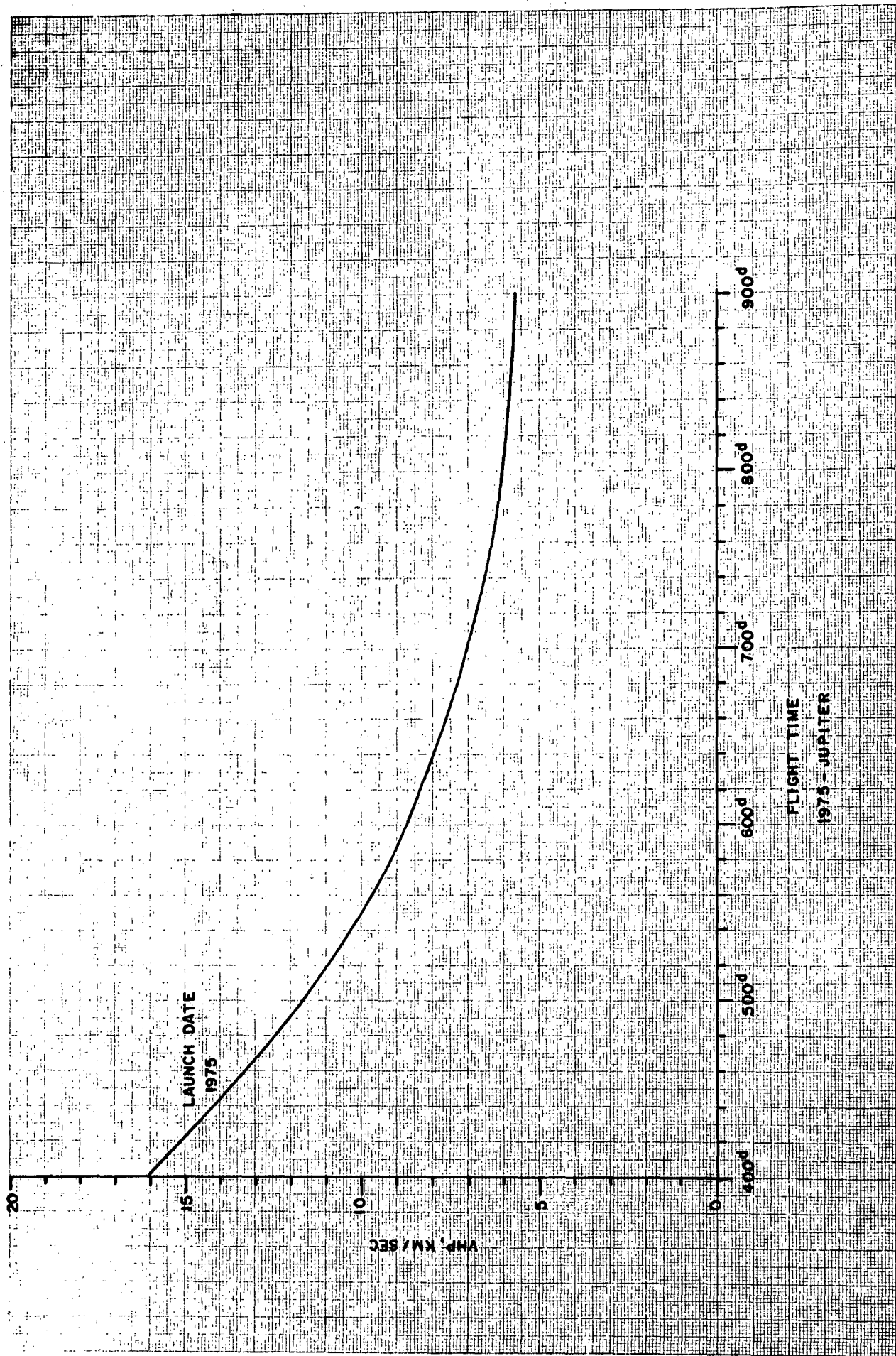


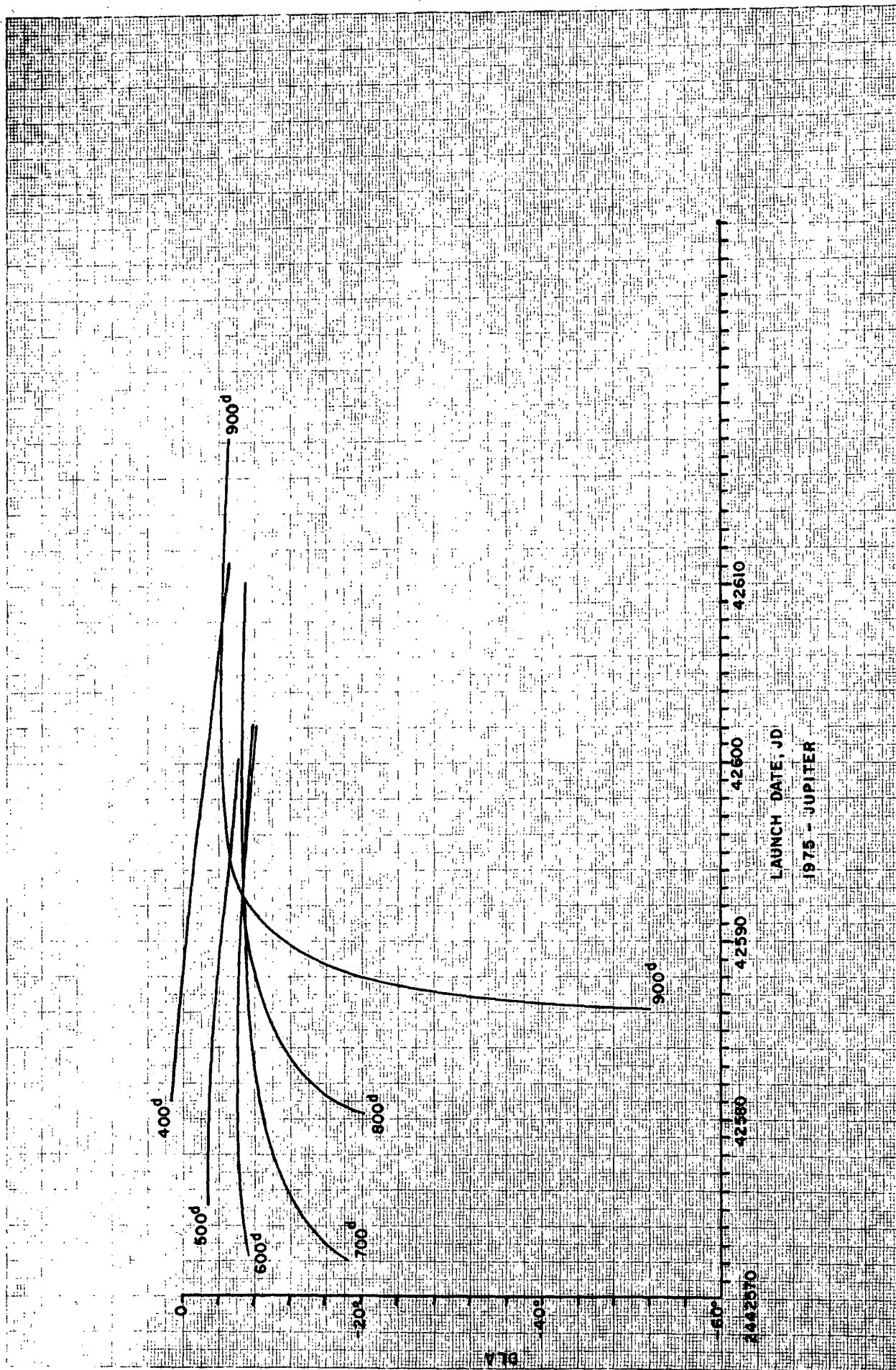


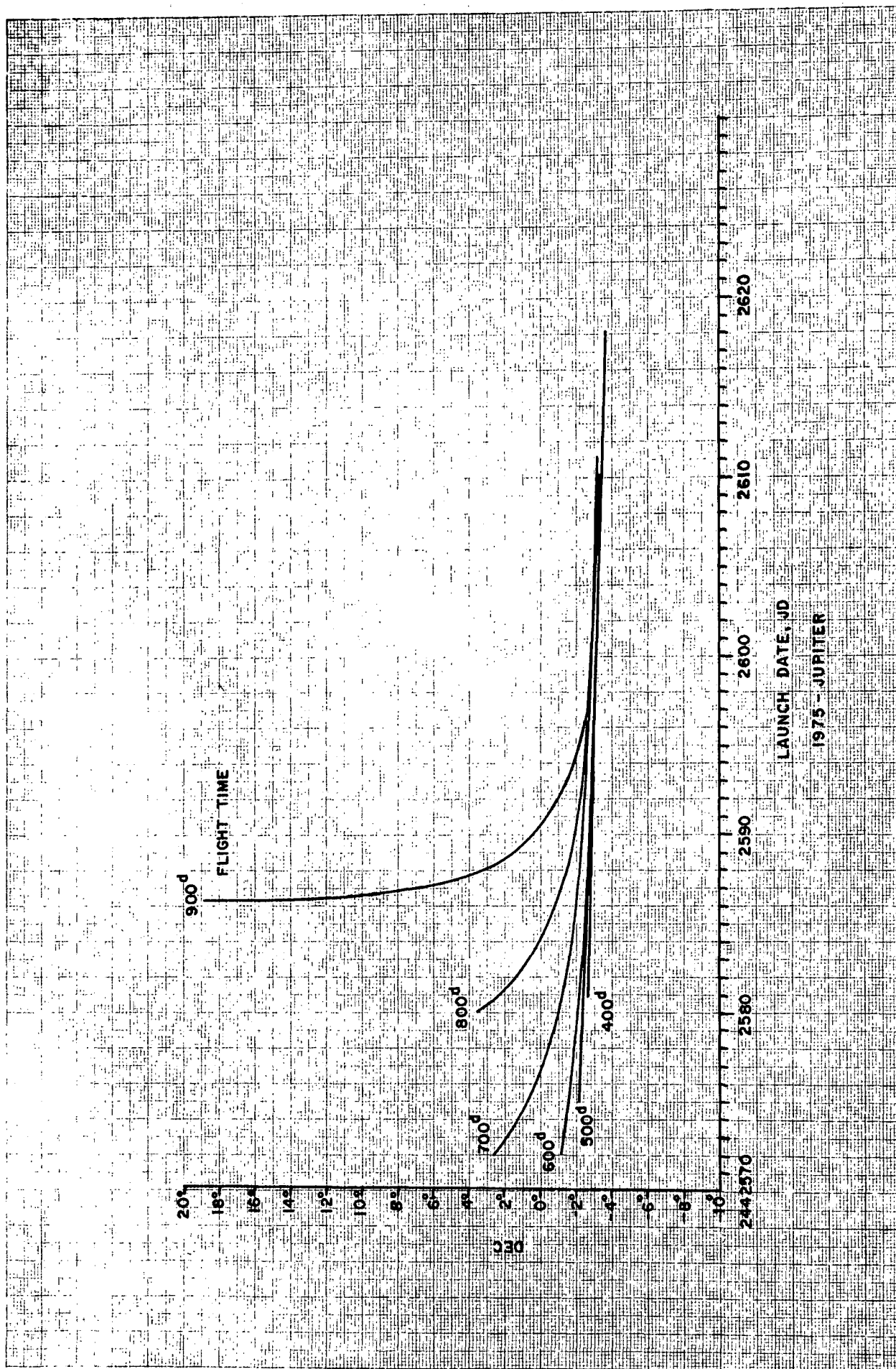


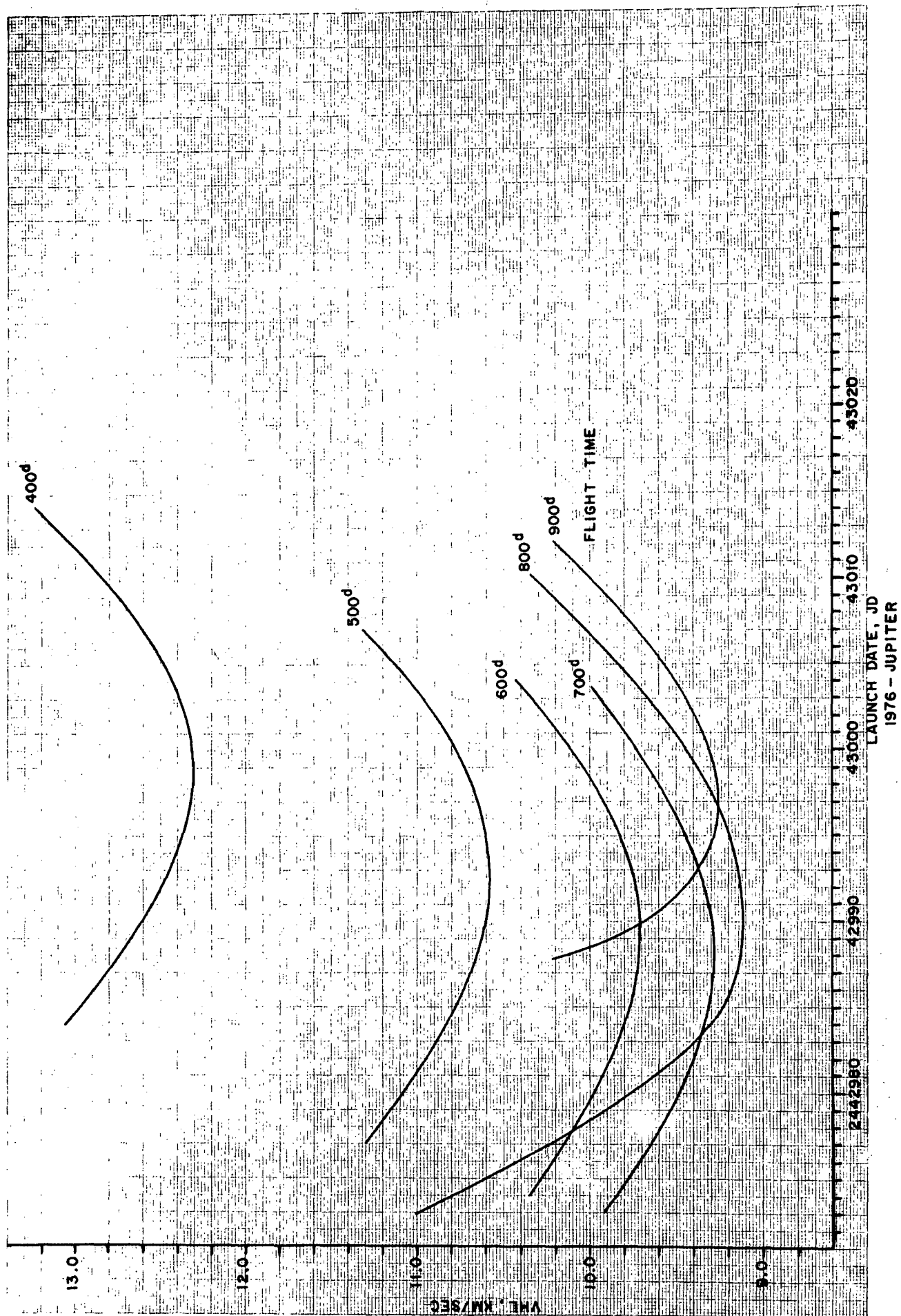


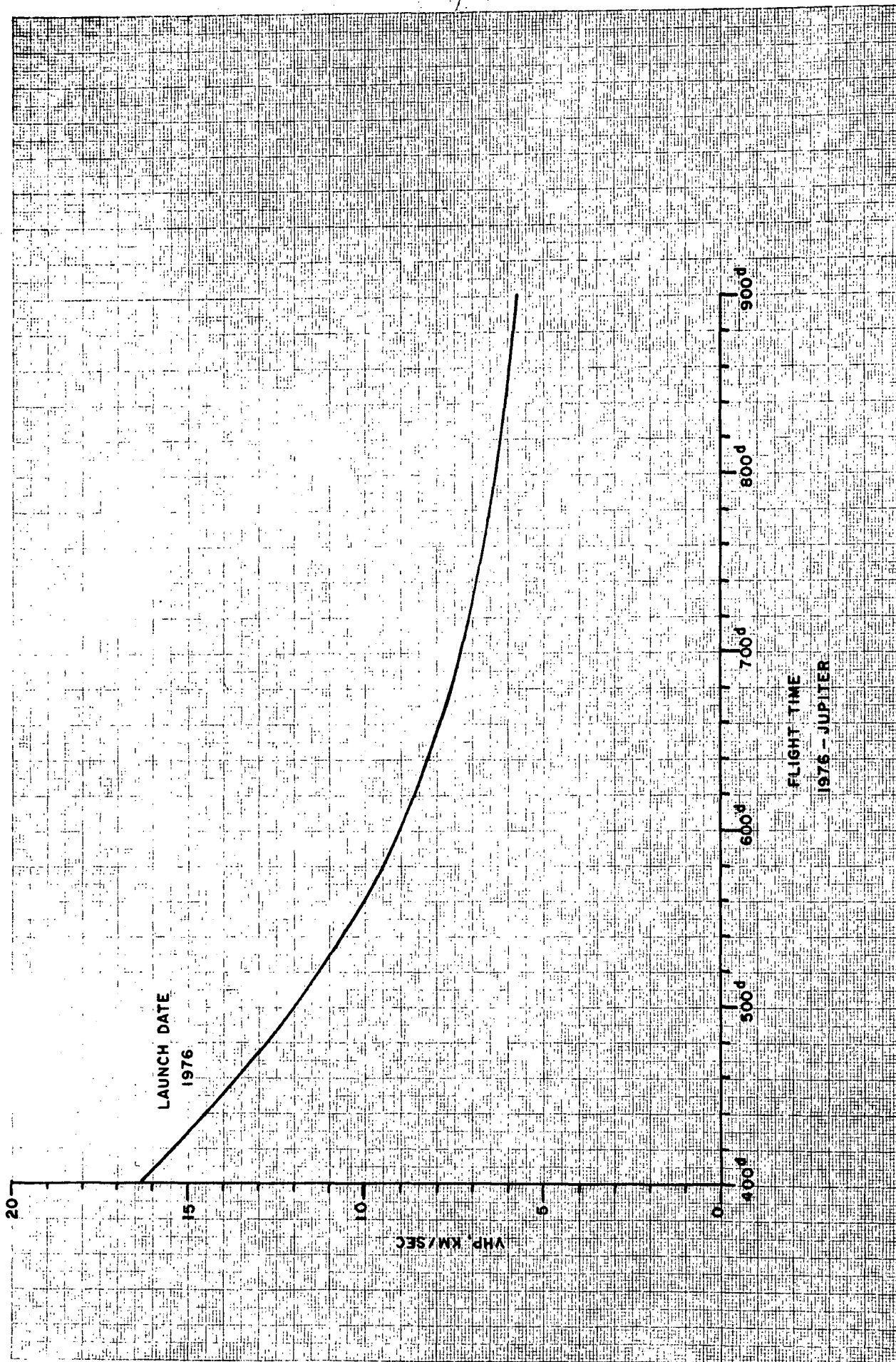


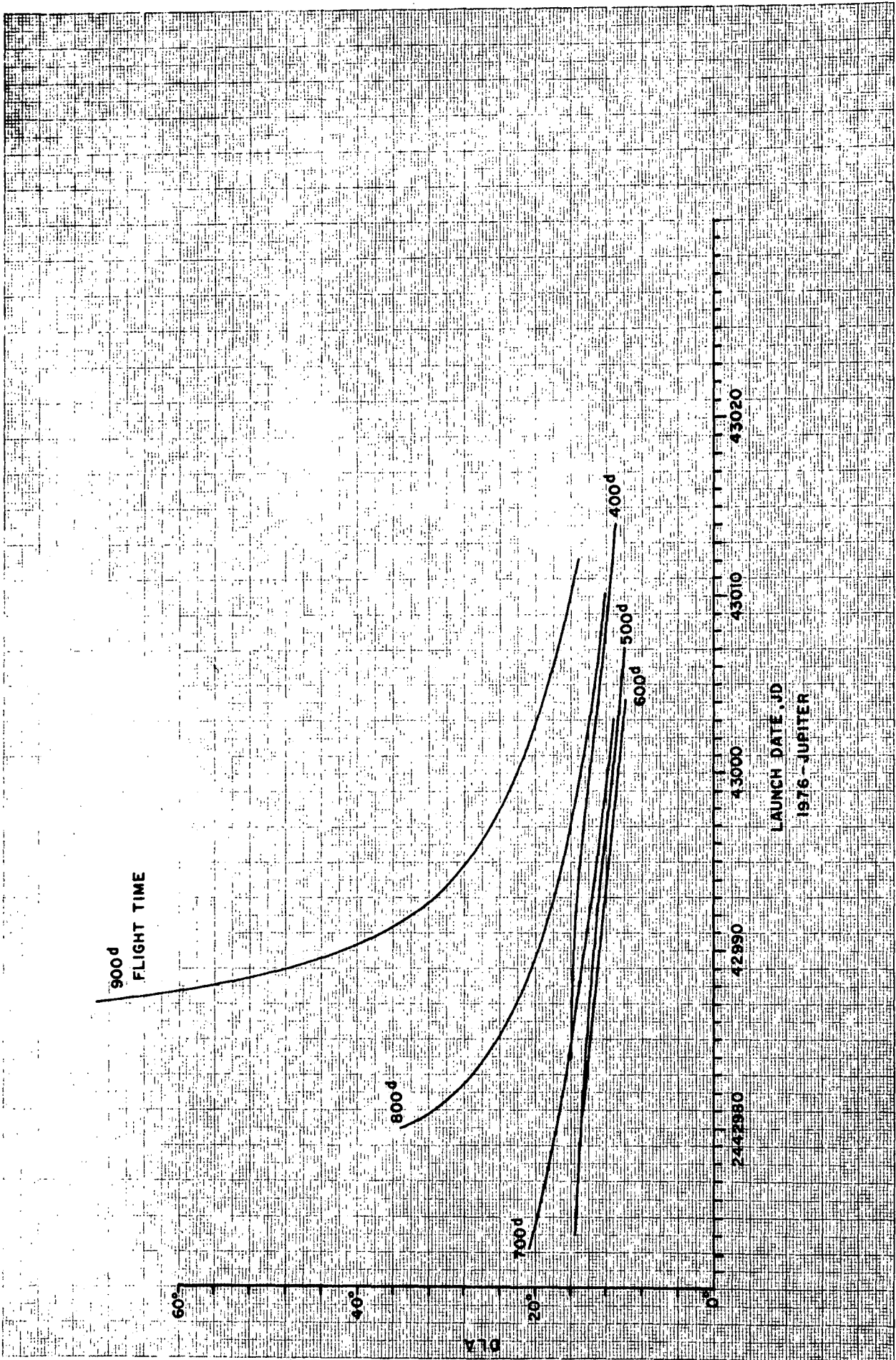


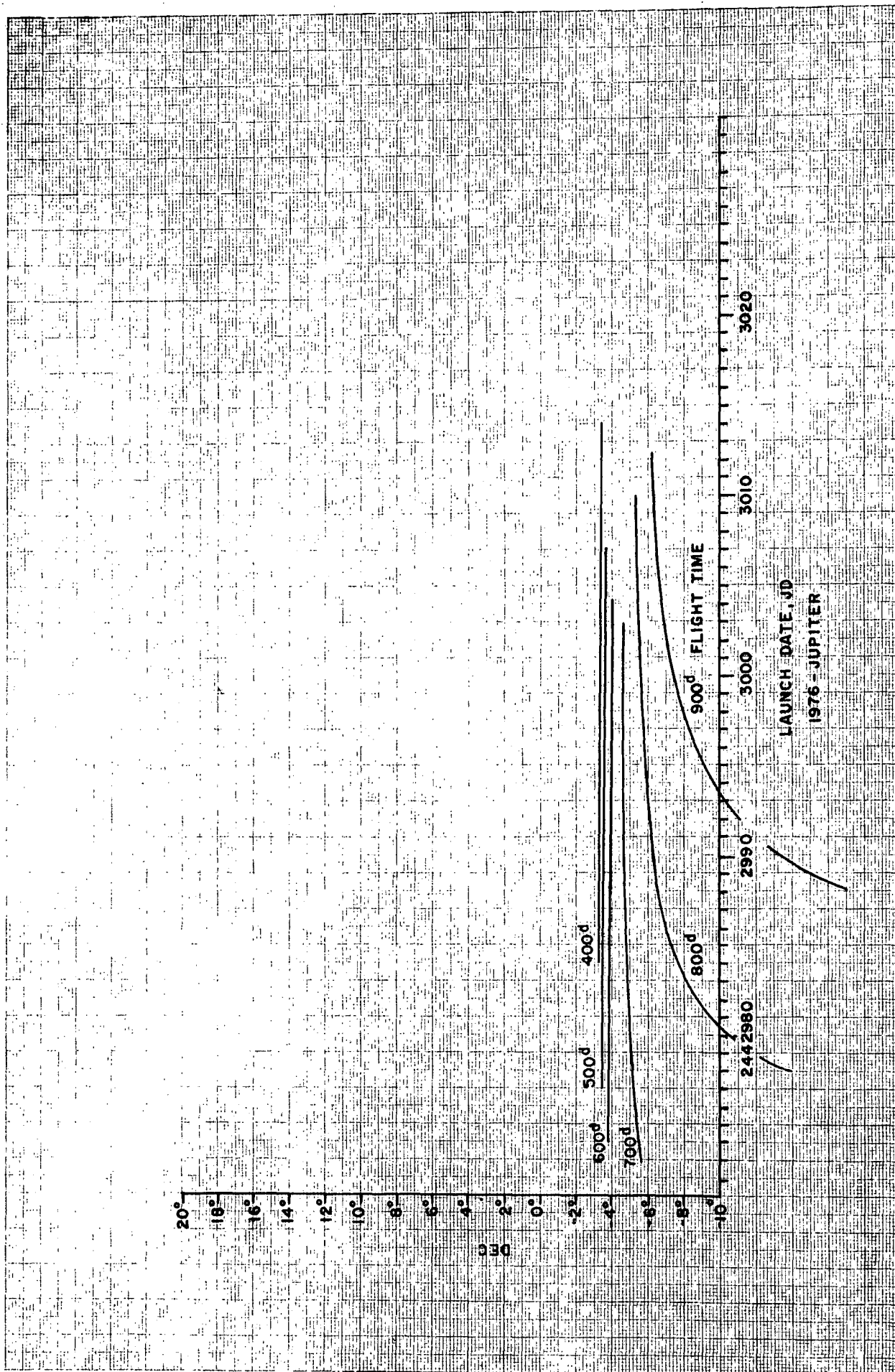












400d

500d

800d

900d
FLIGHT TIME

600d

700d

13.0

12.0

VHL, KM/SEC

10.0

9.0

2443380

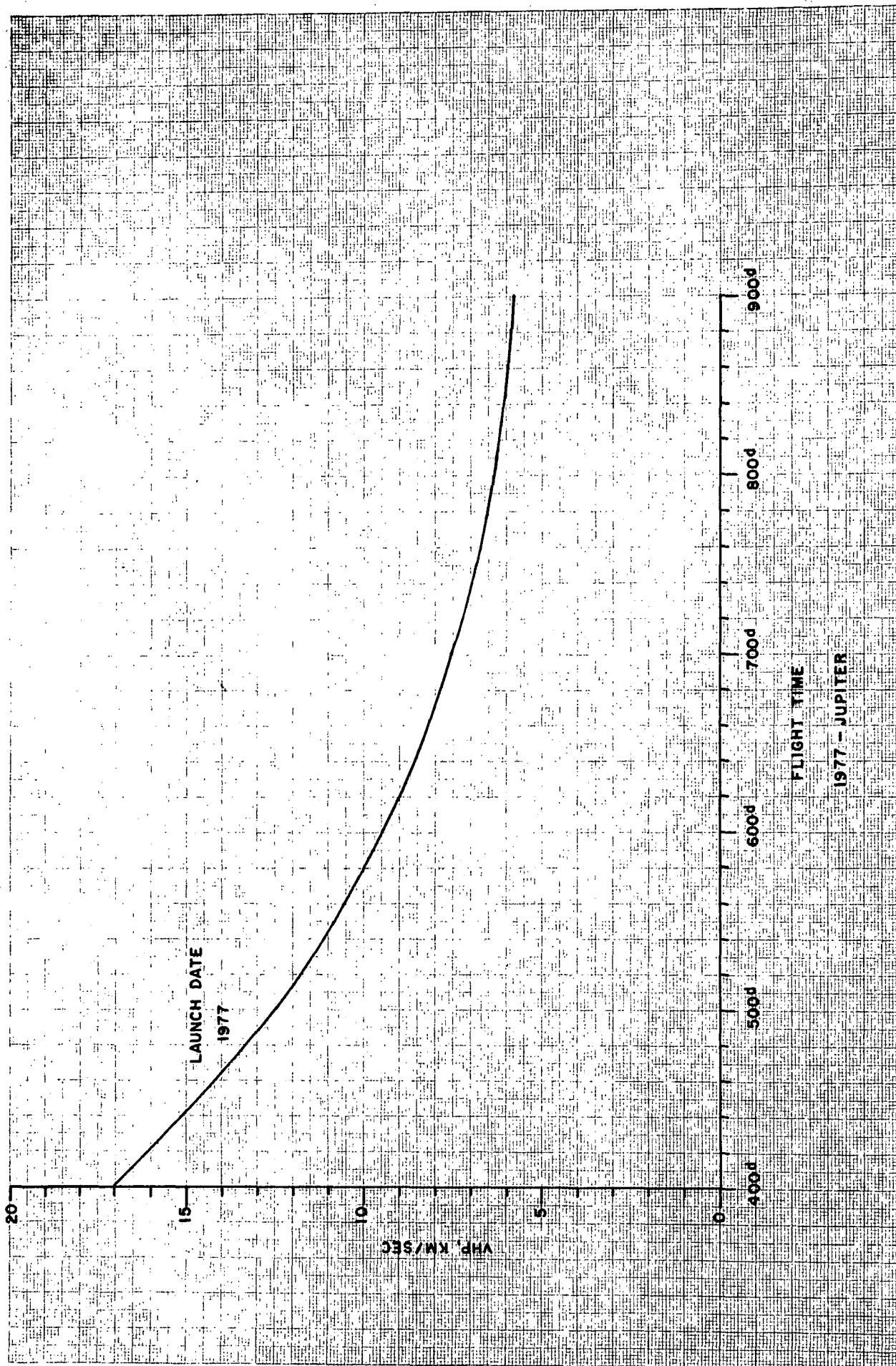
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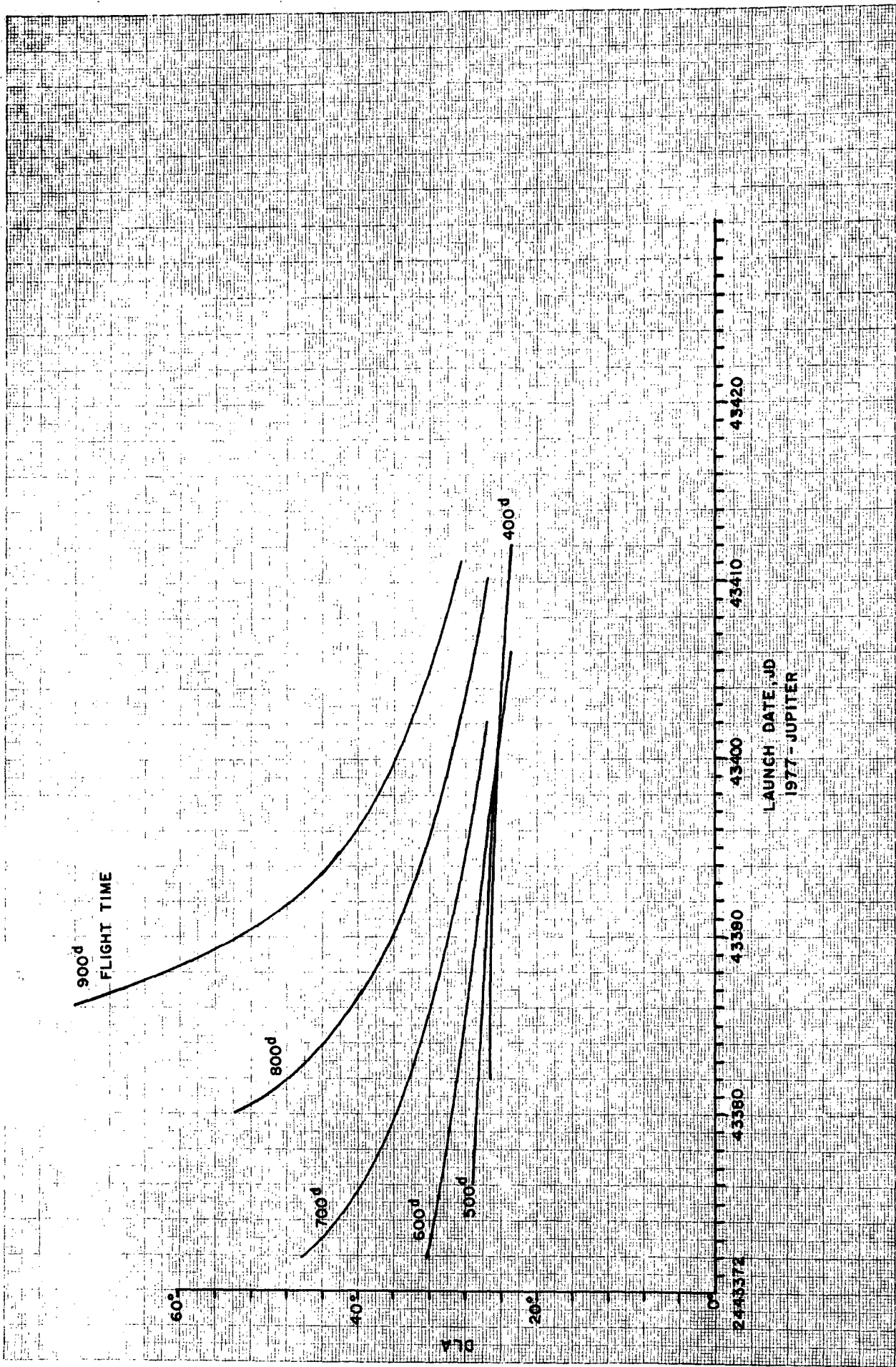
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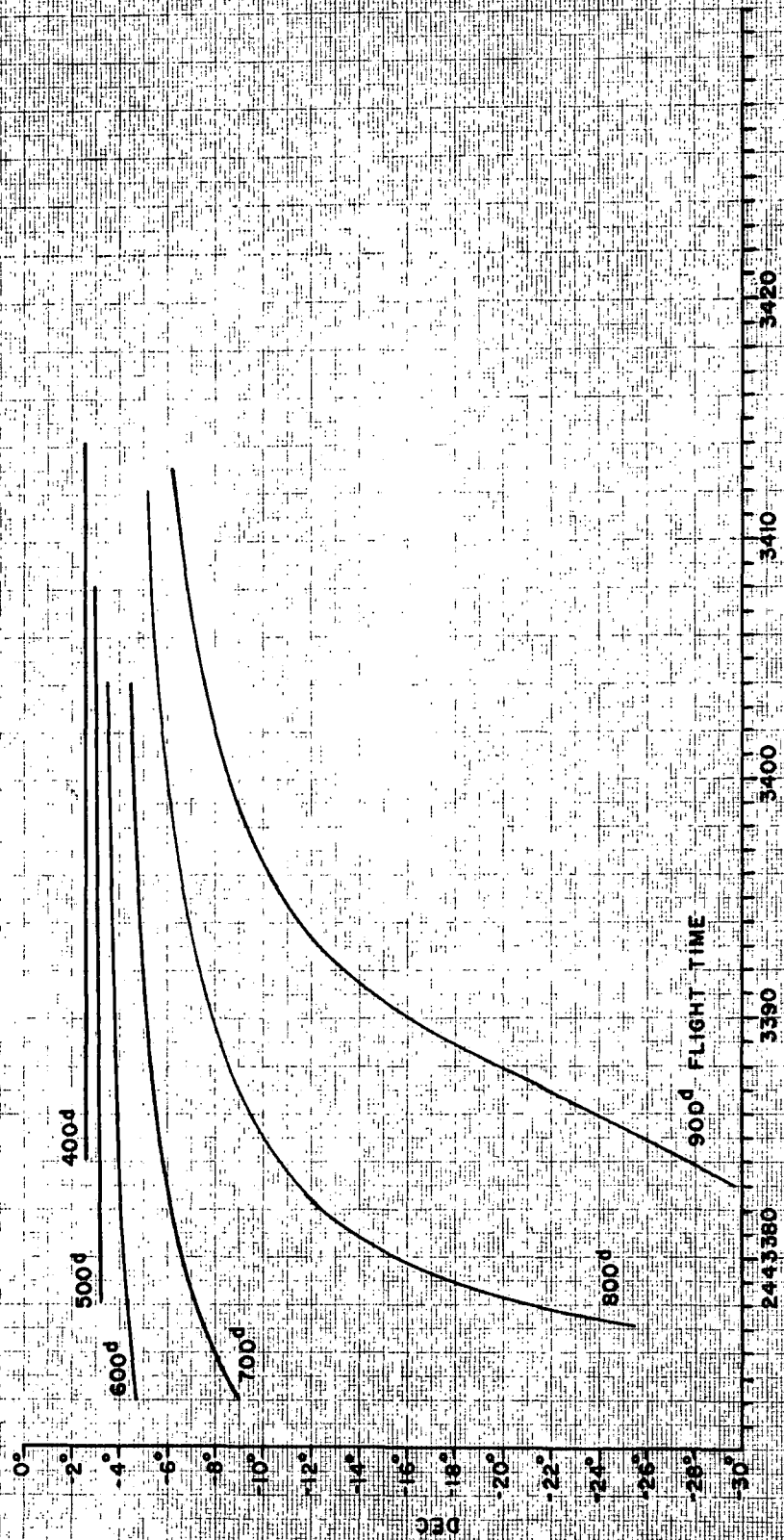
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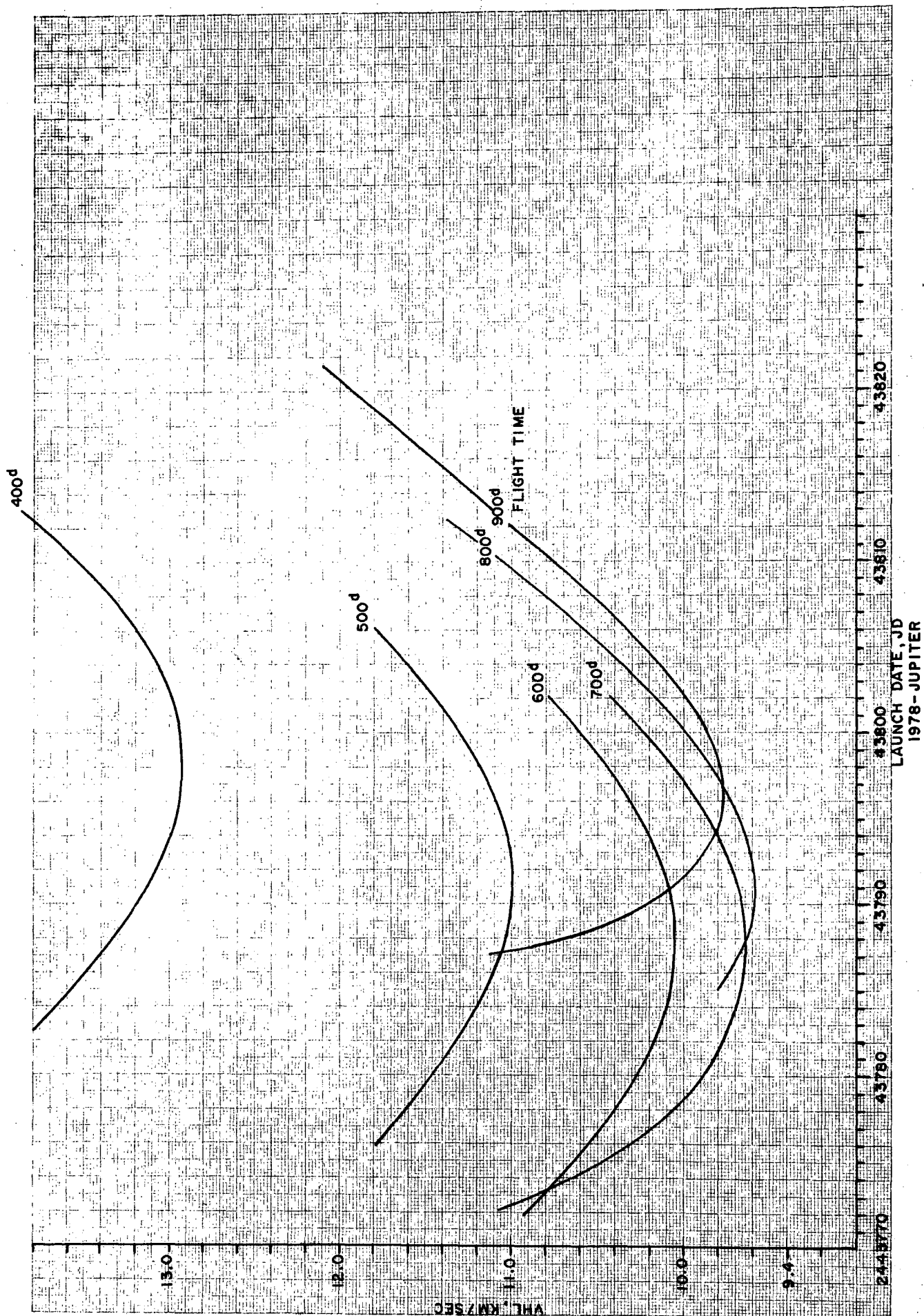
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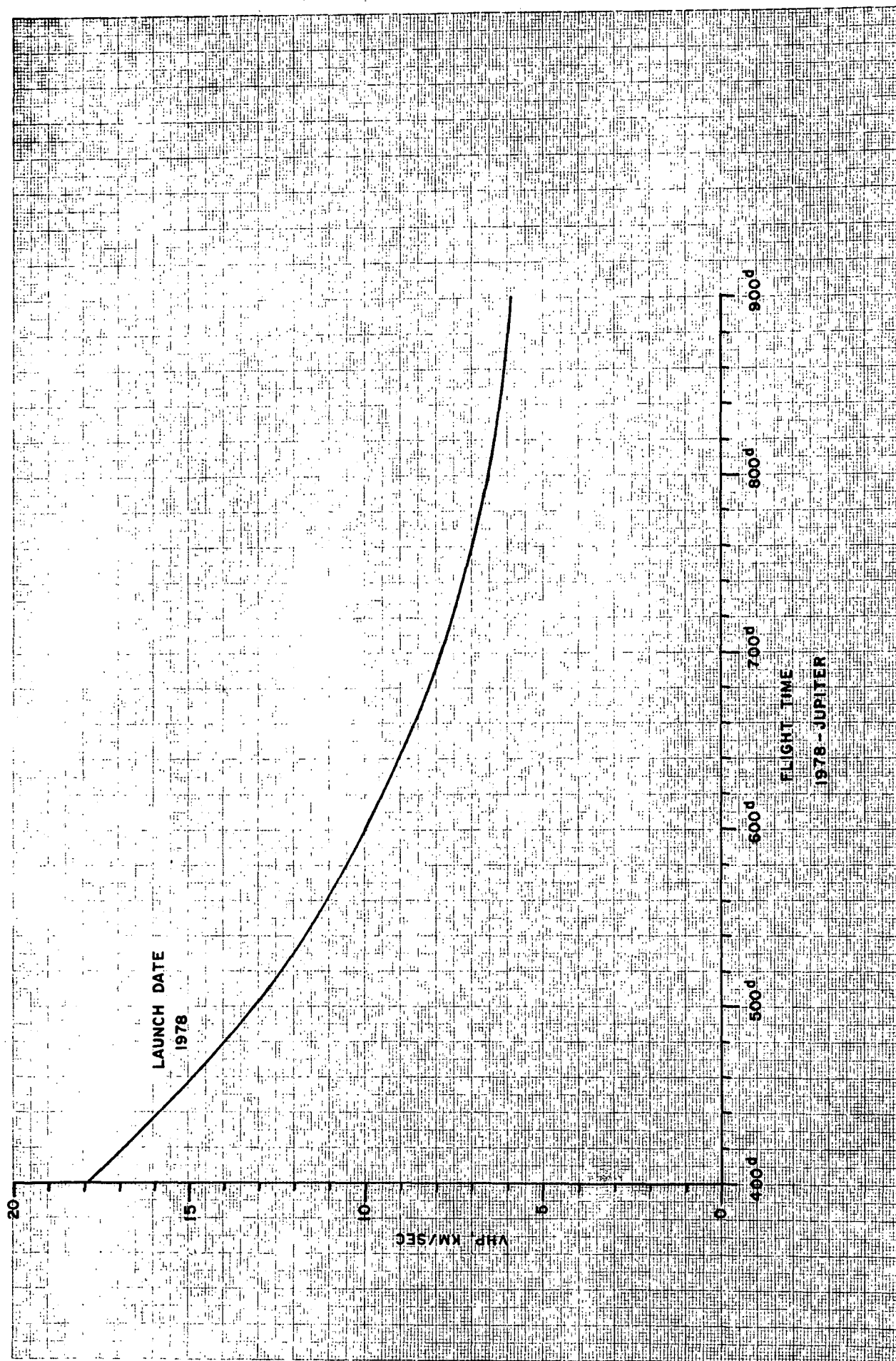


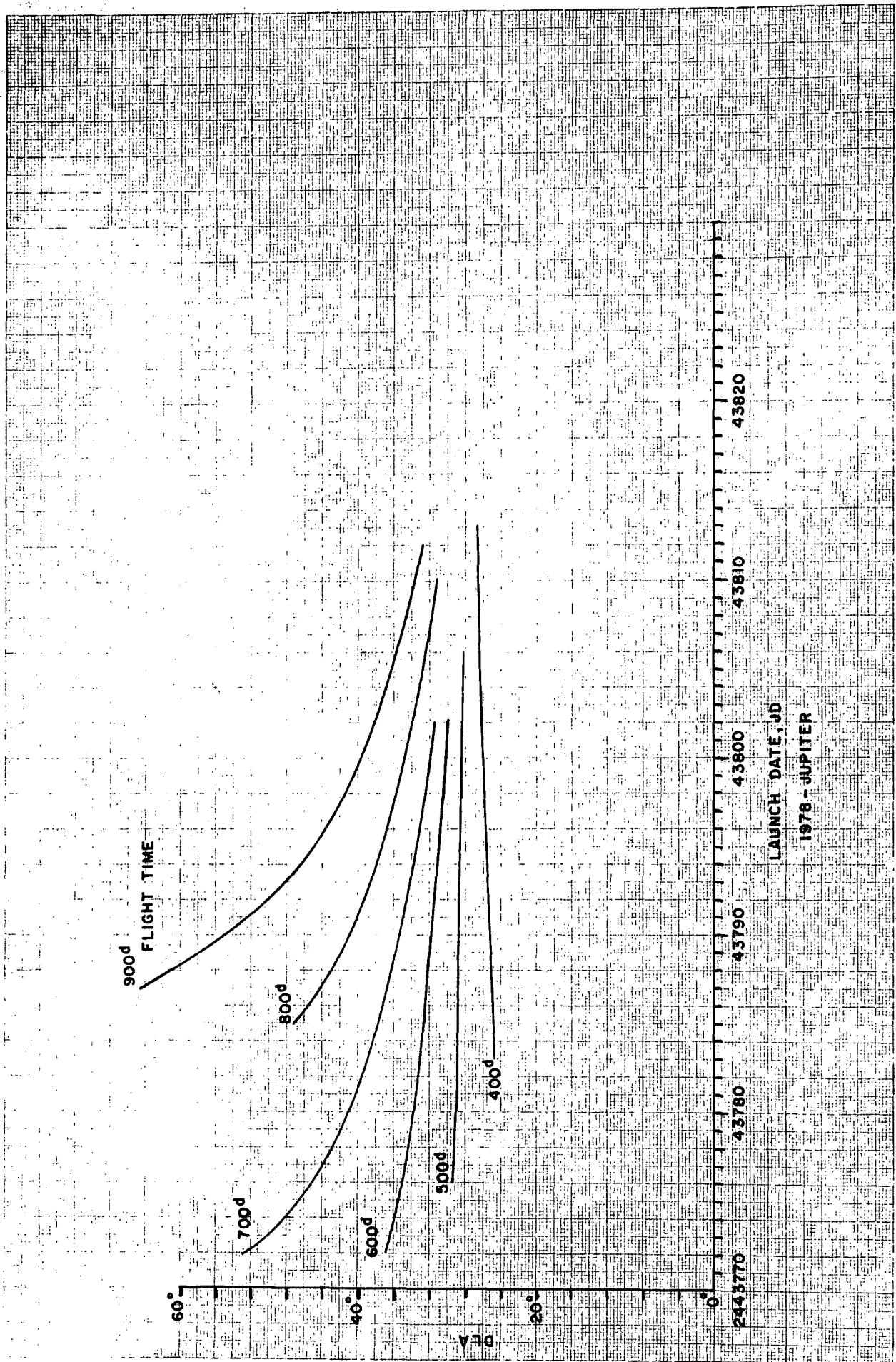


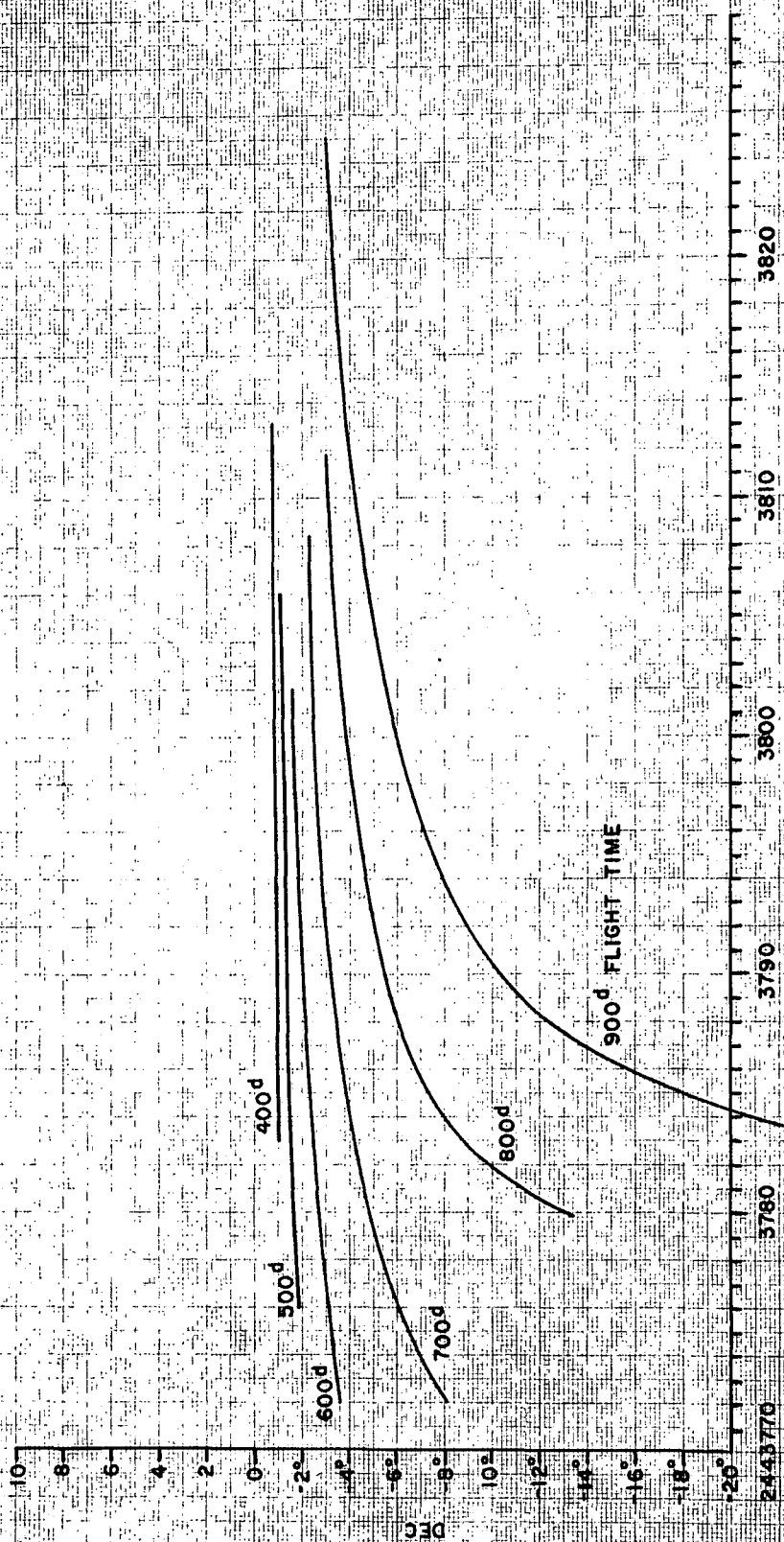


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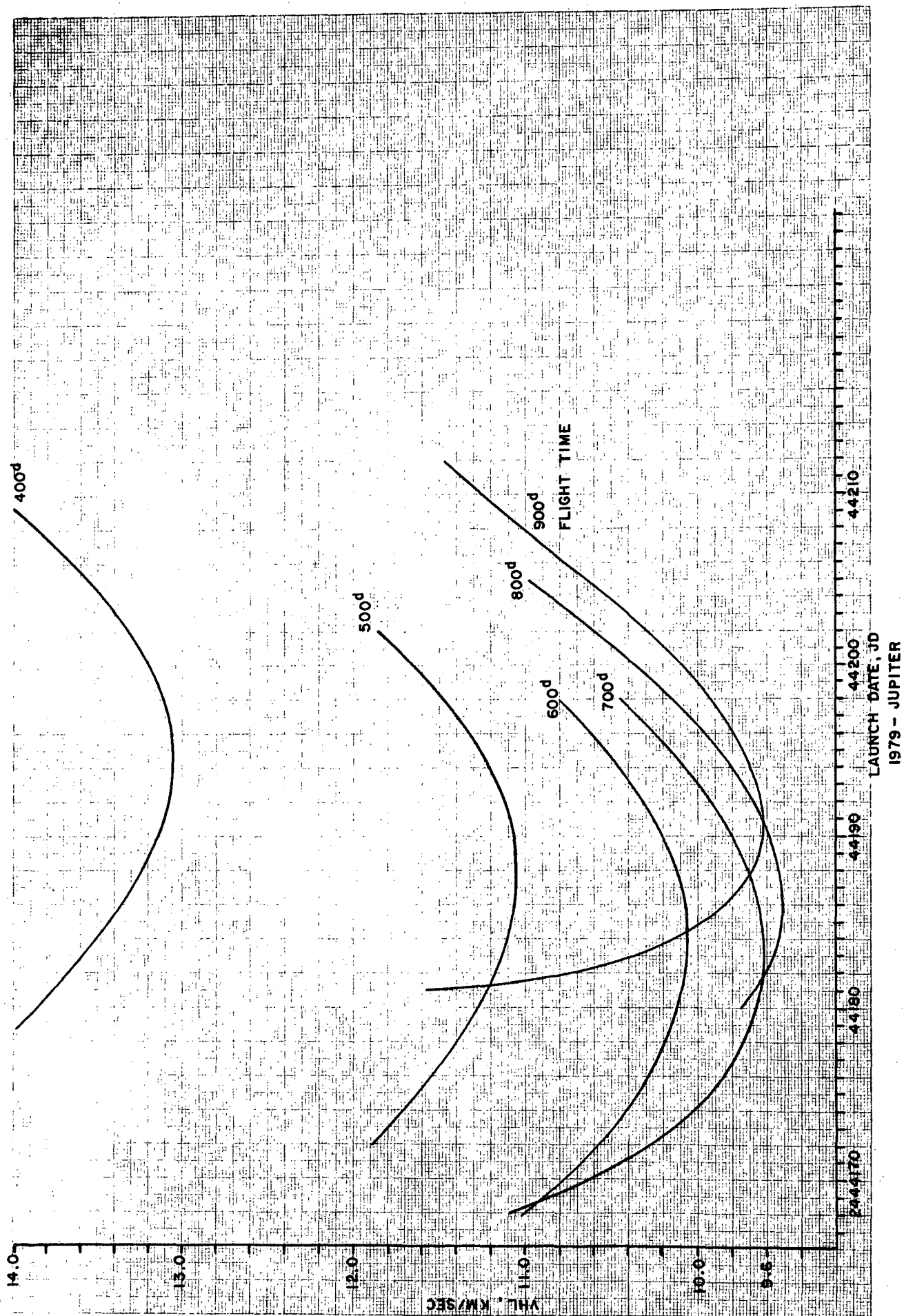


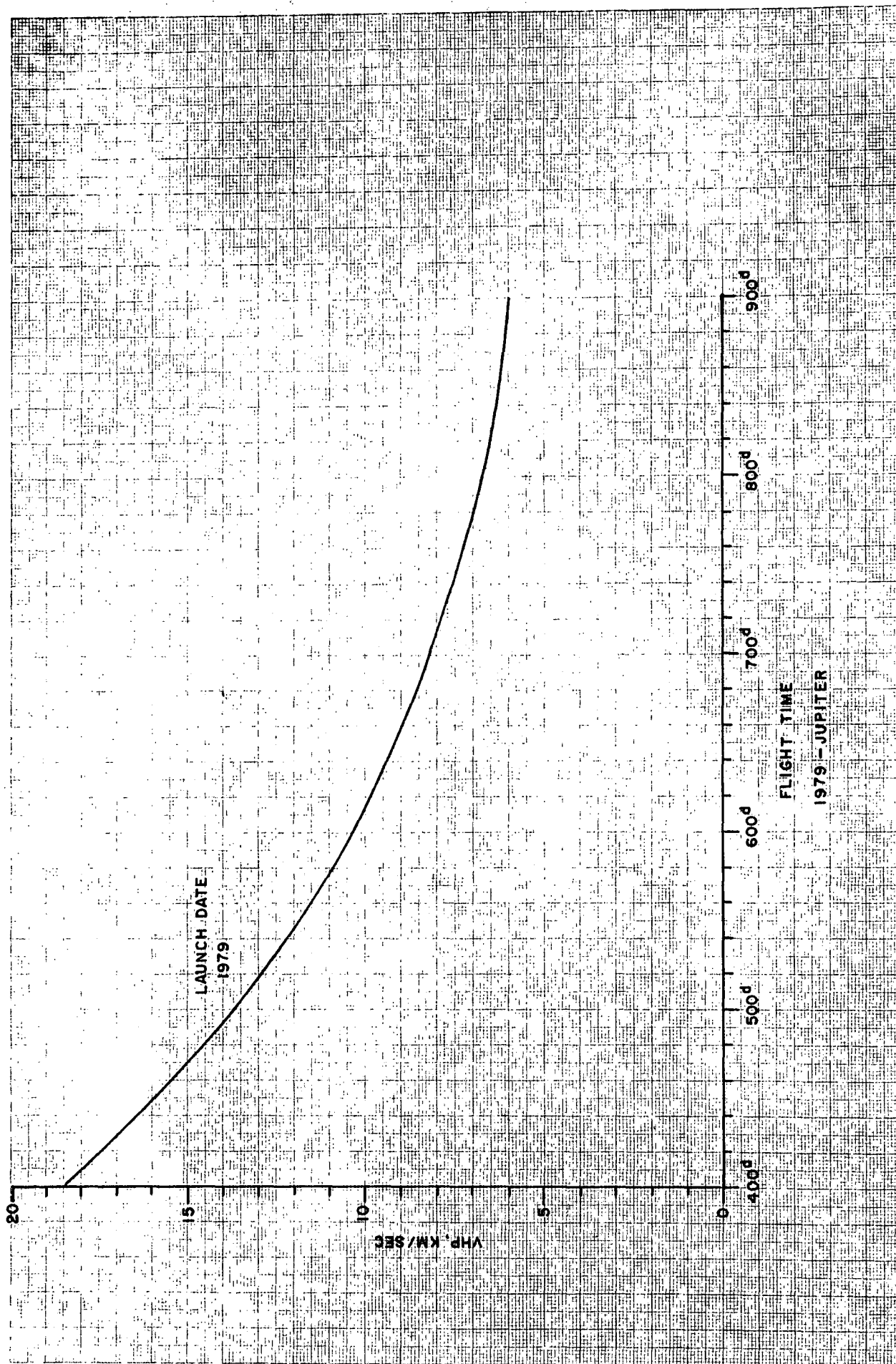


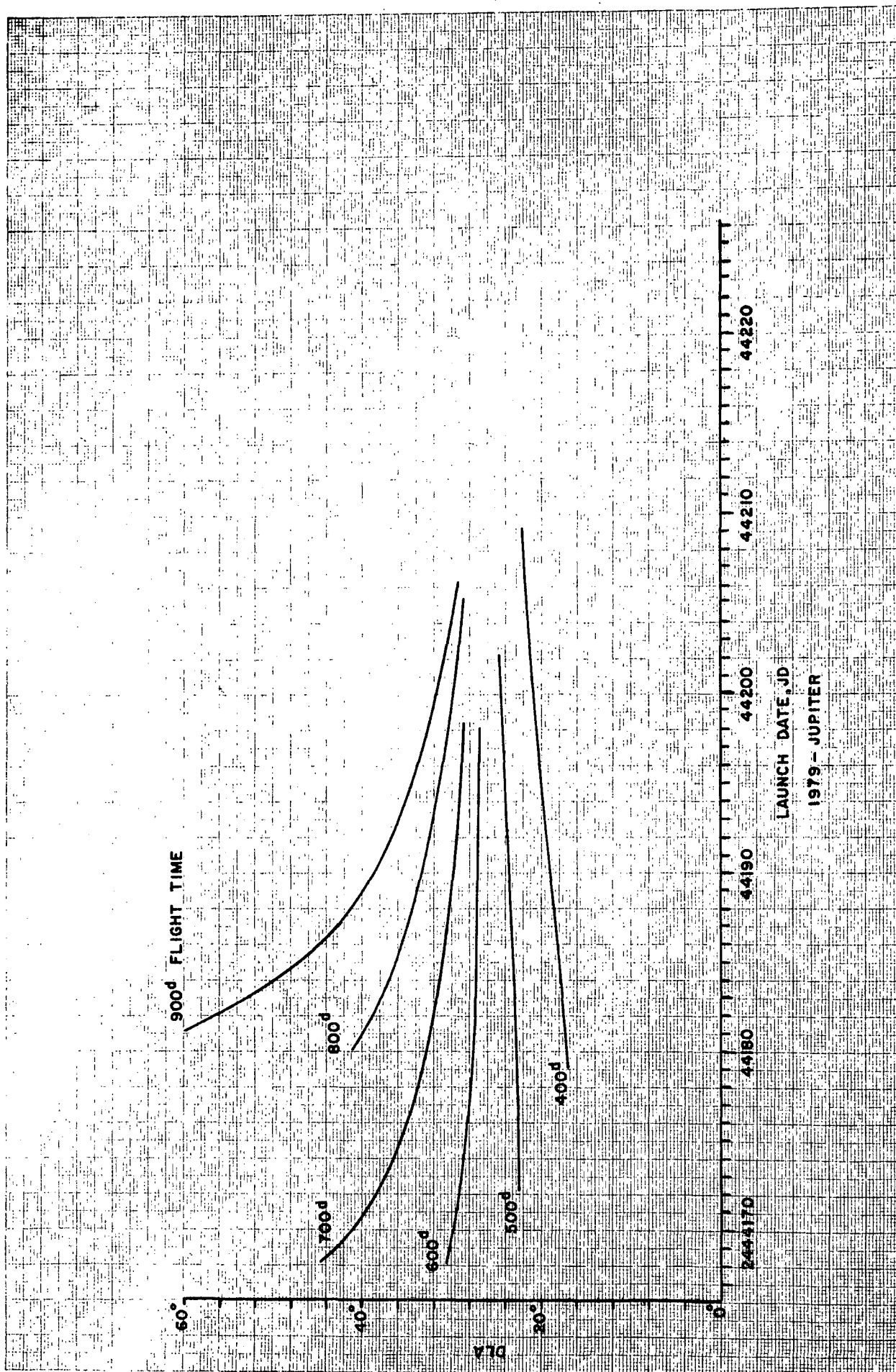


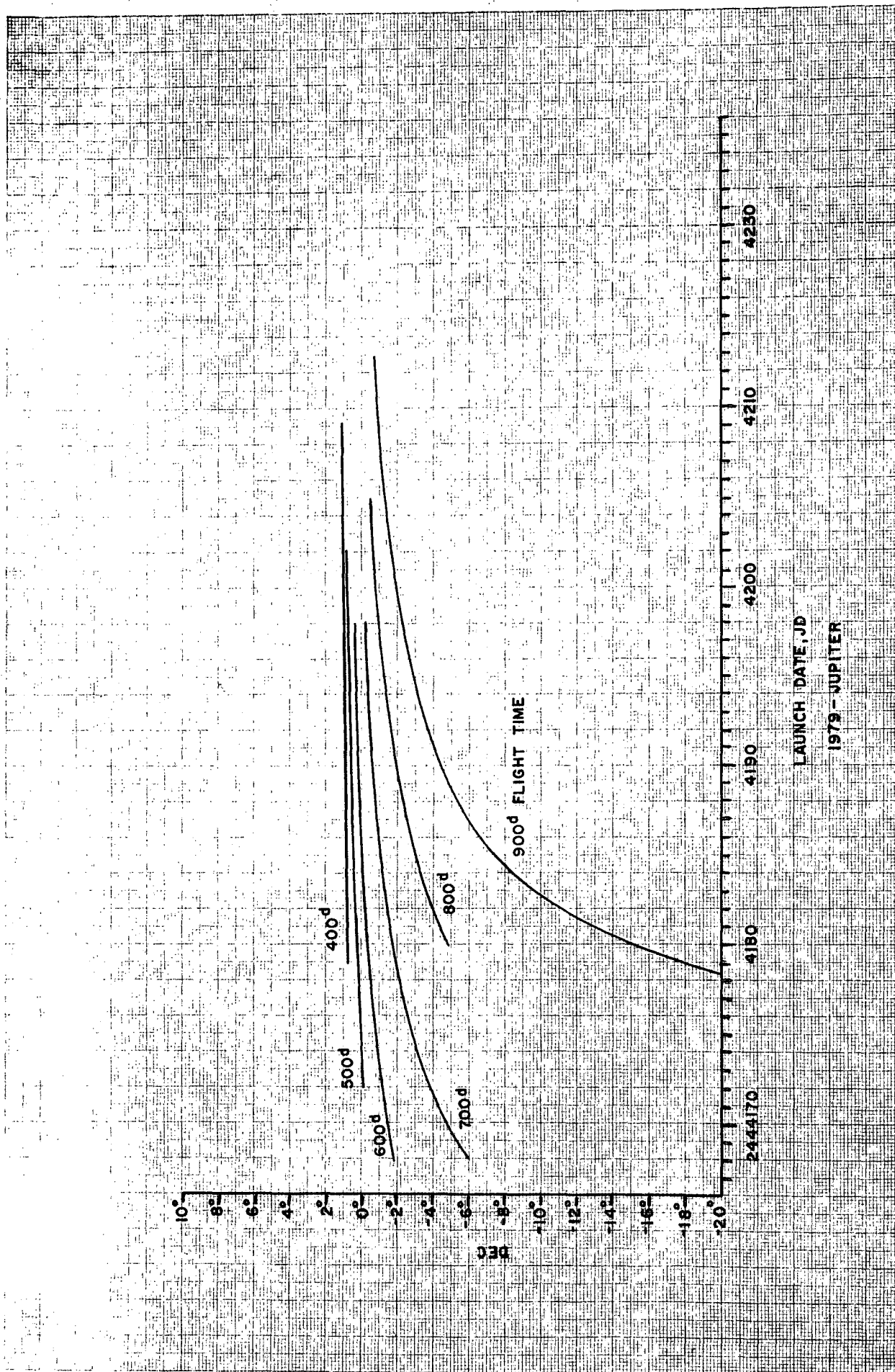


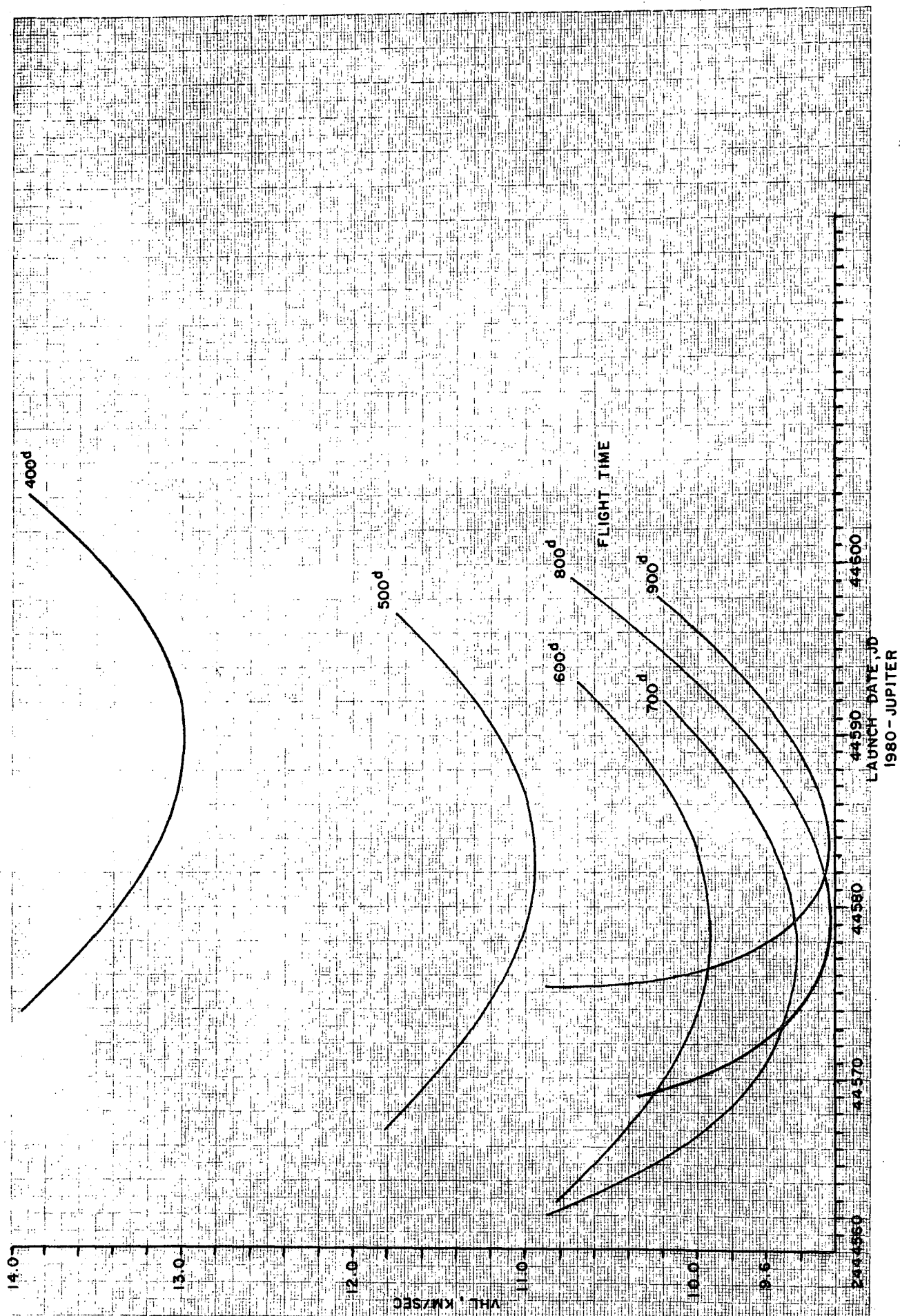
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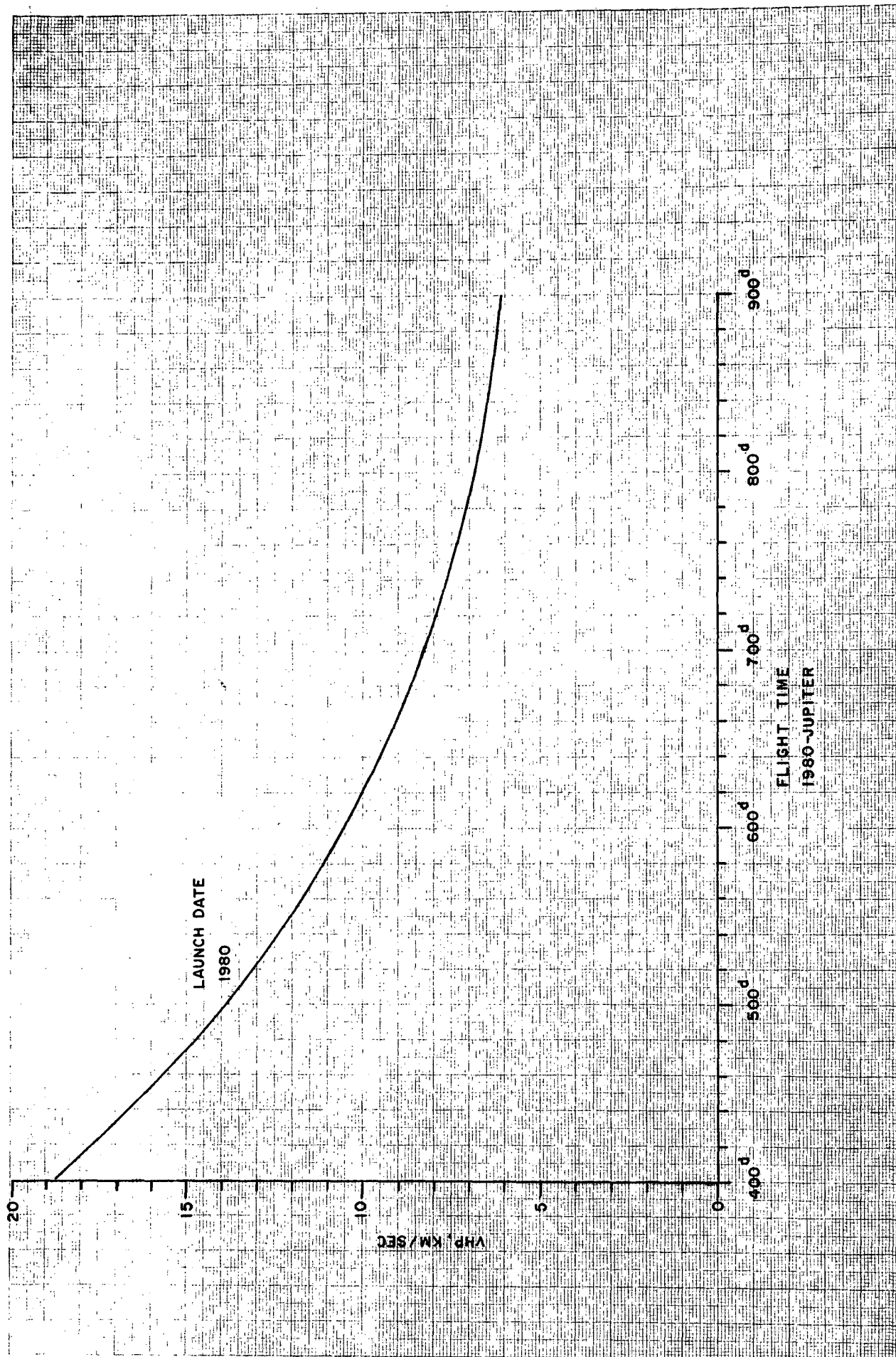


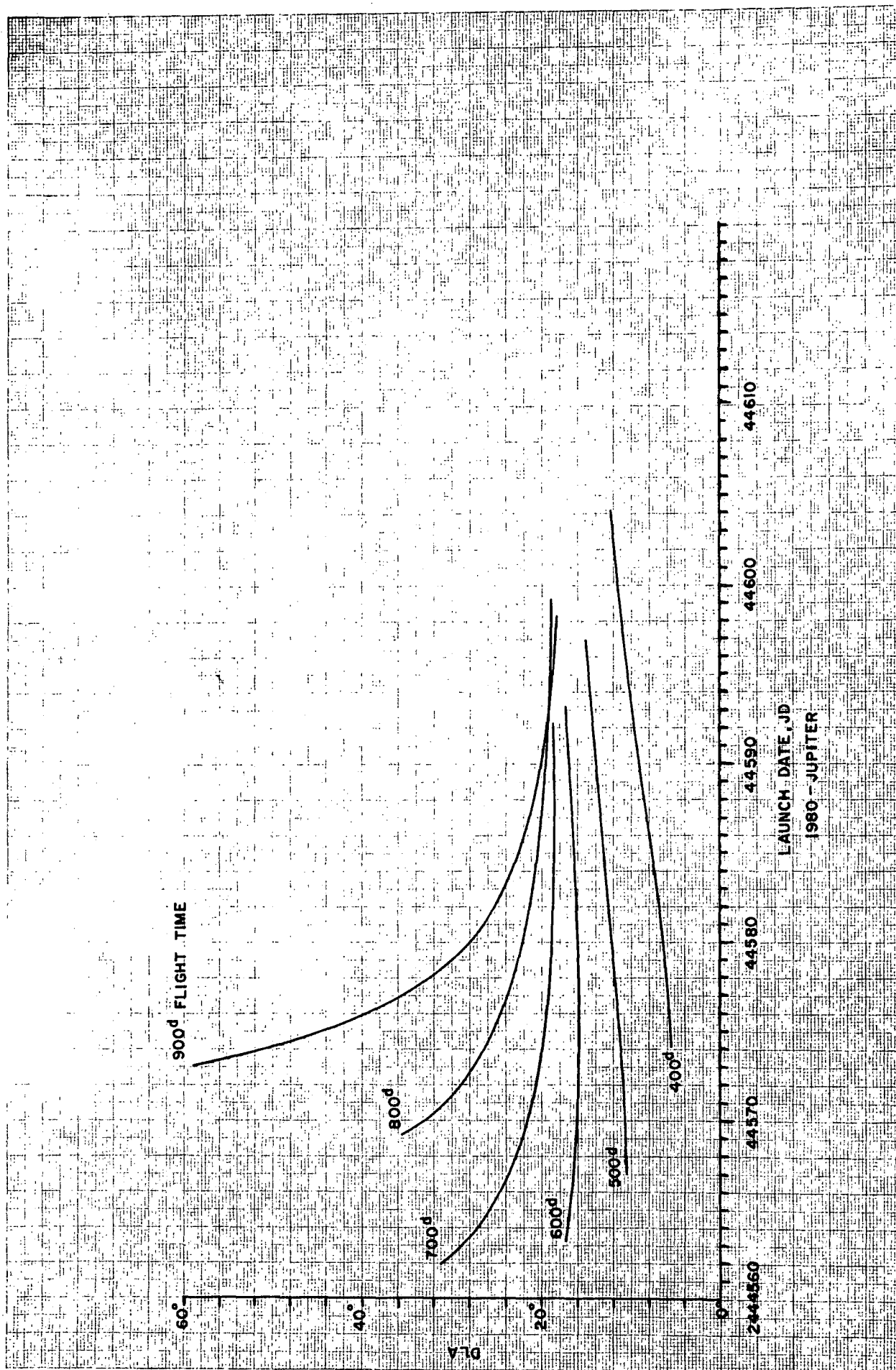


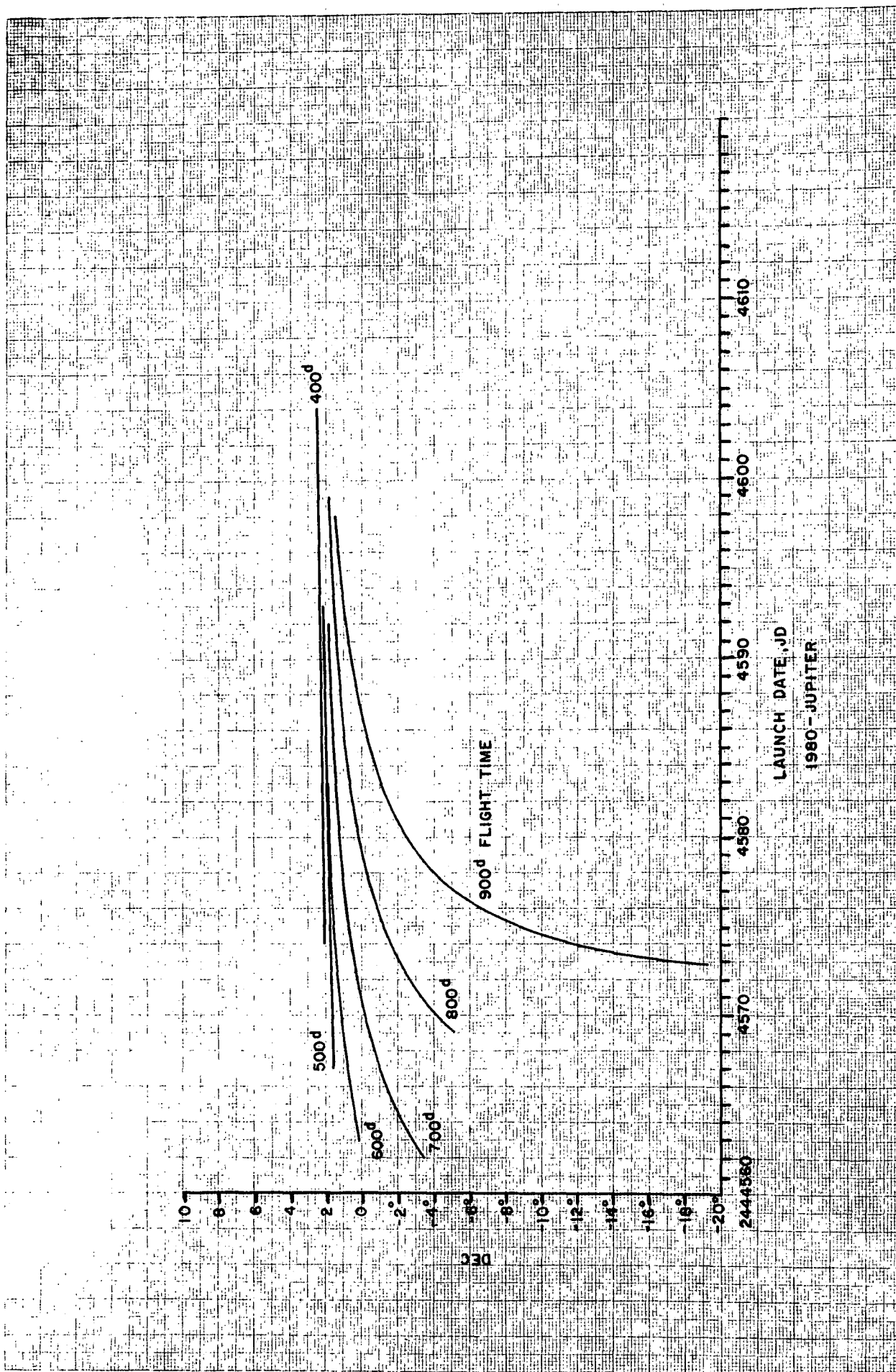


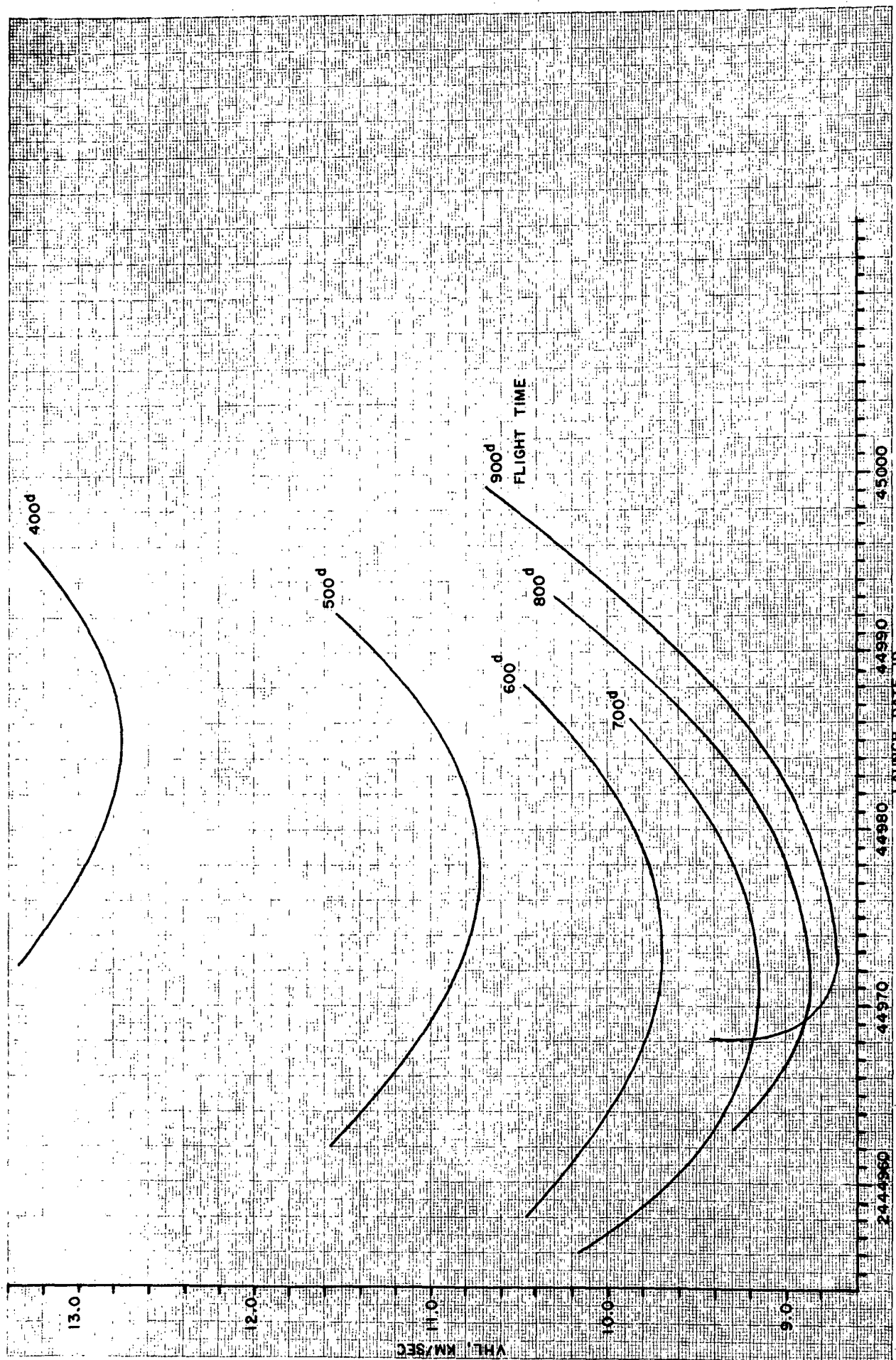




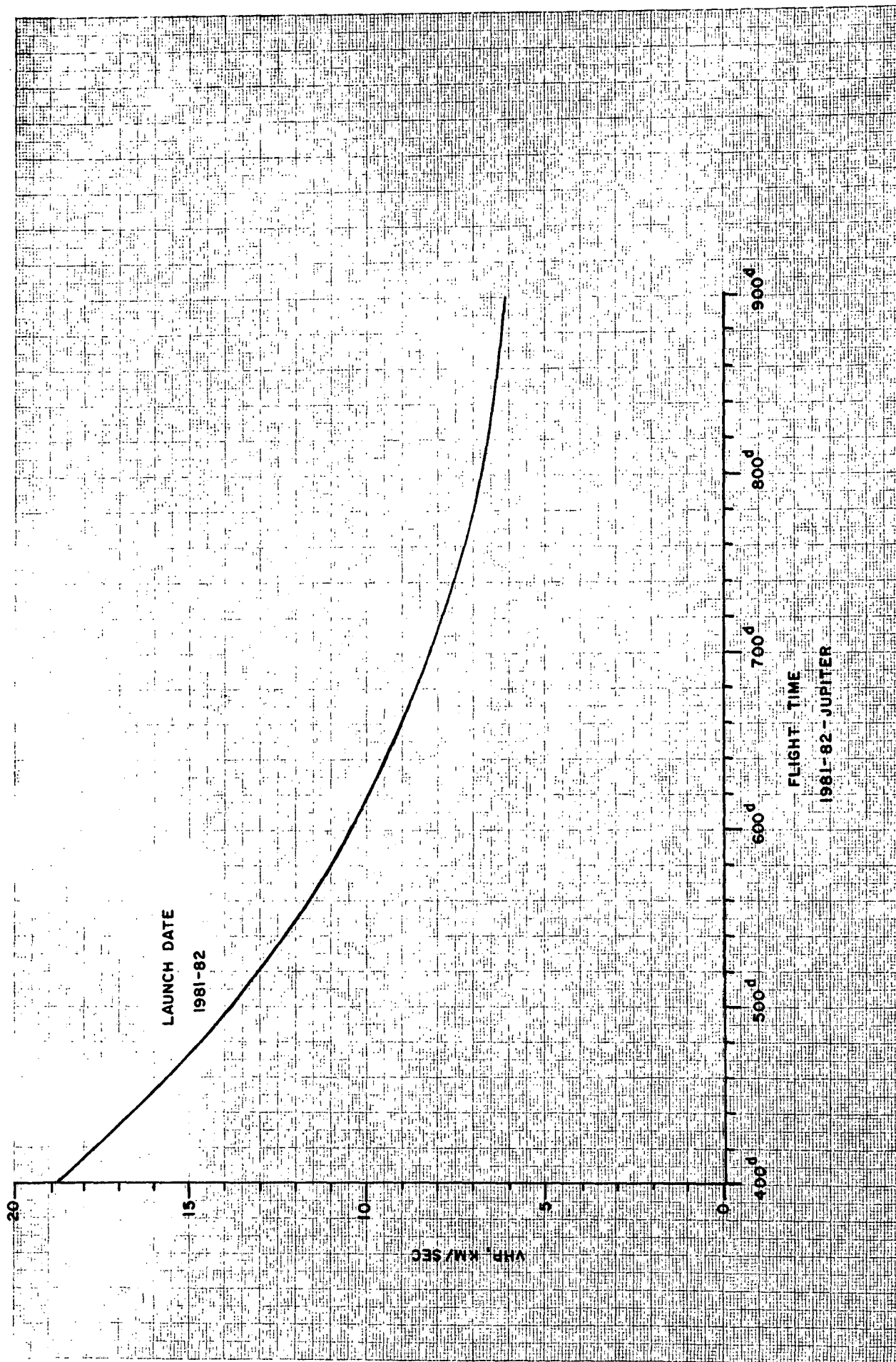


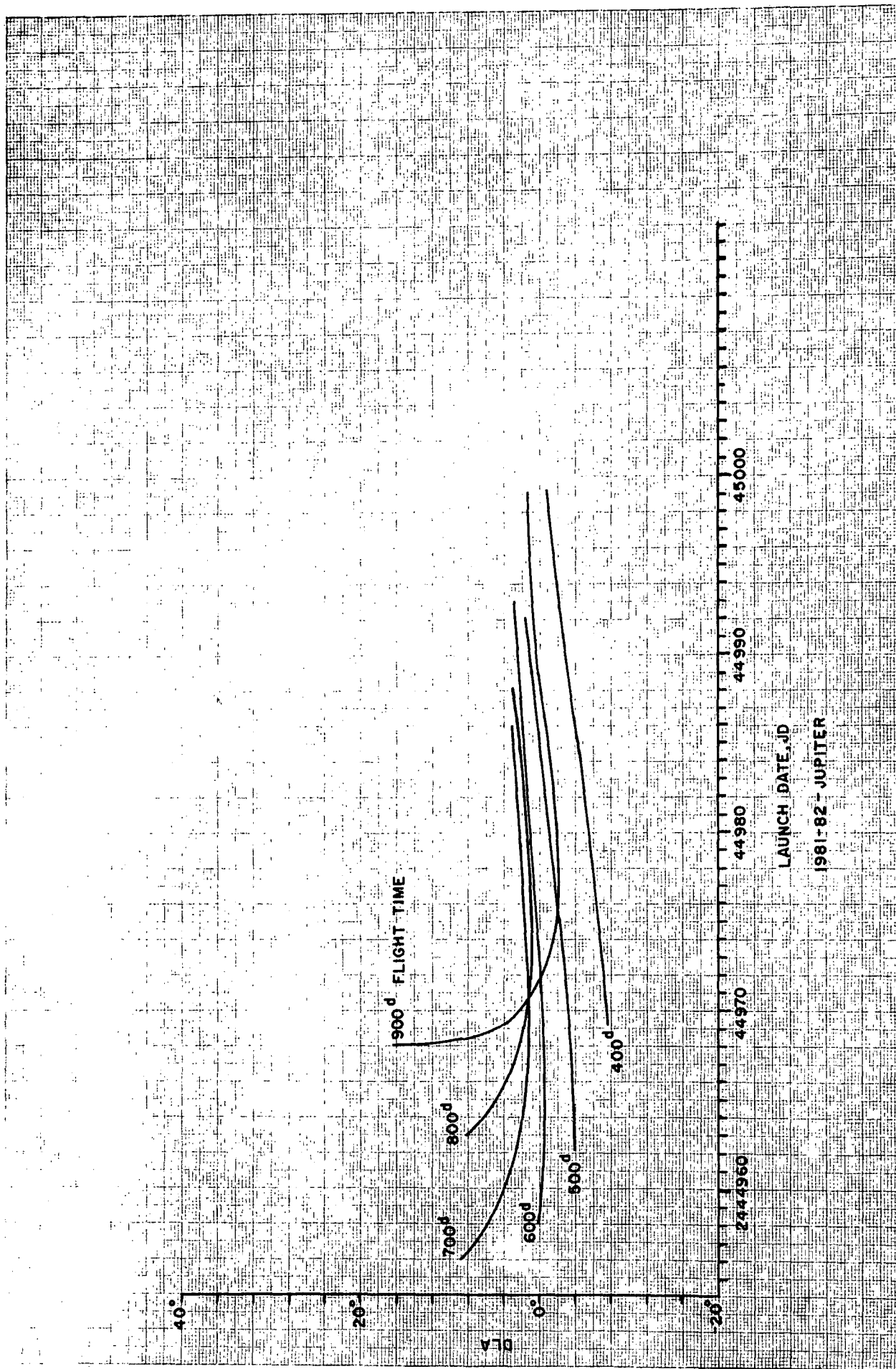


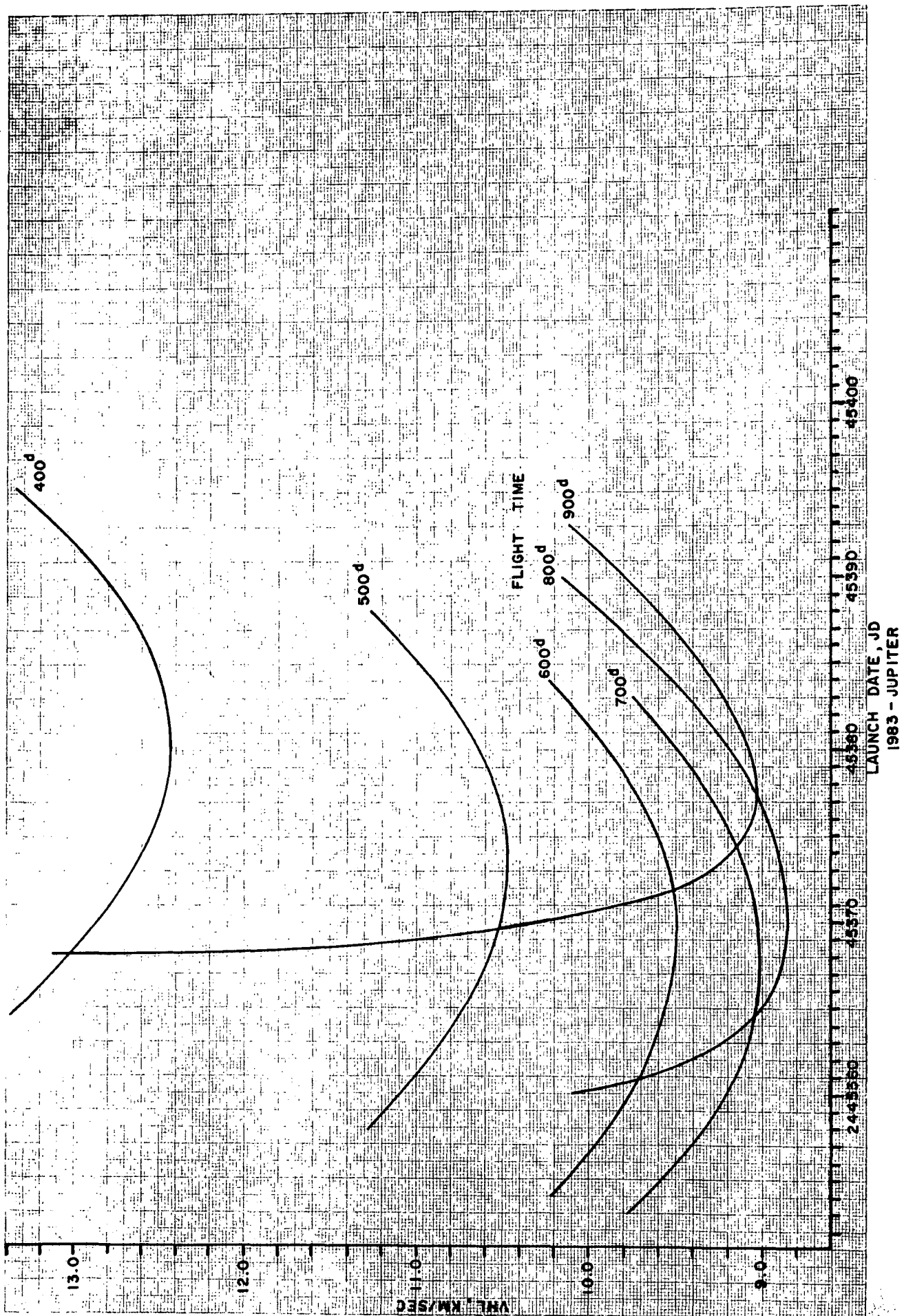


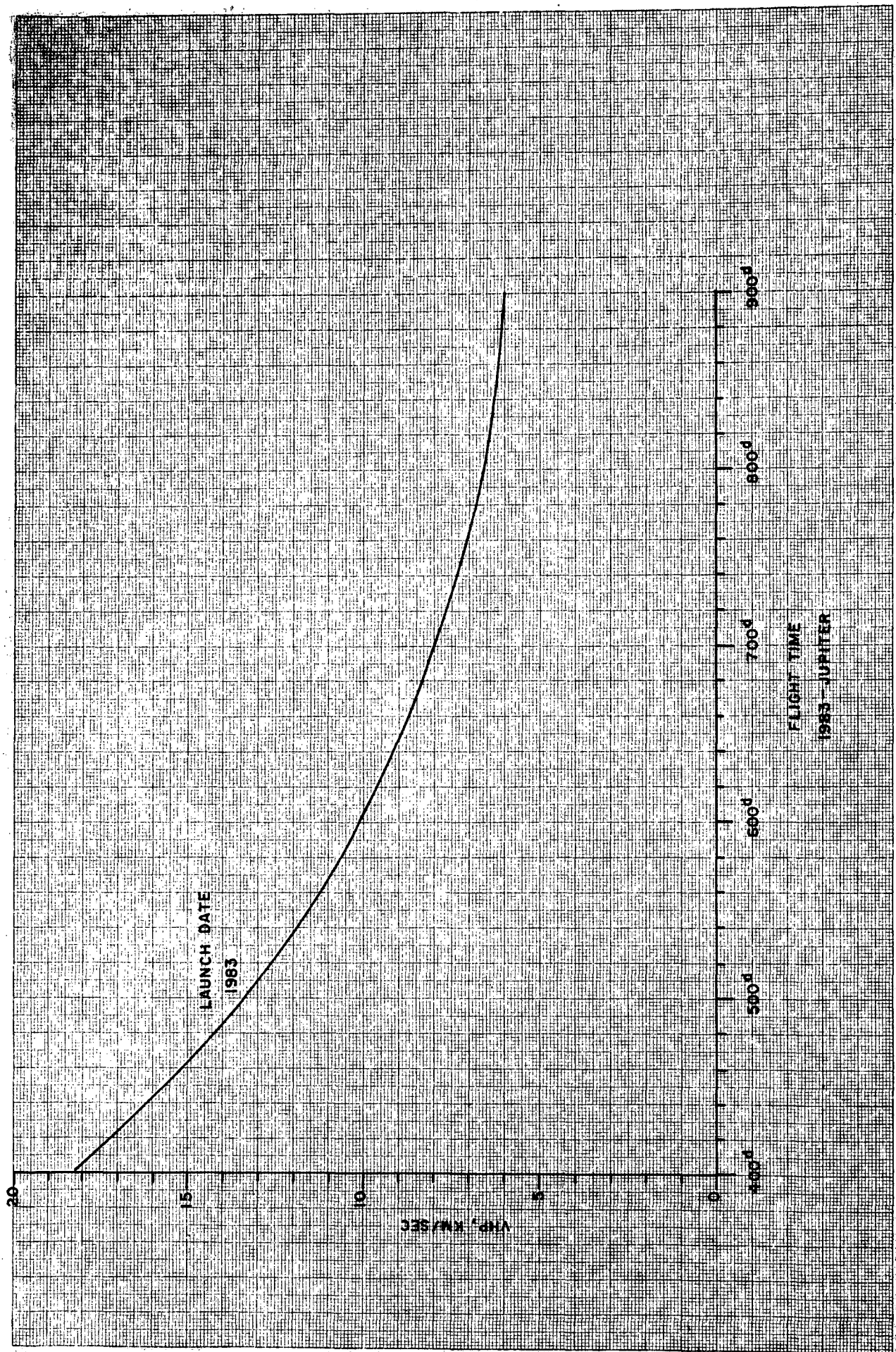


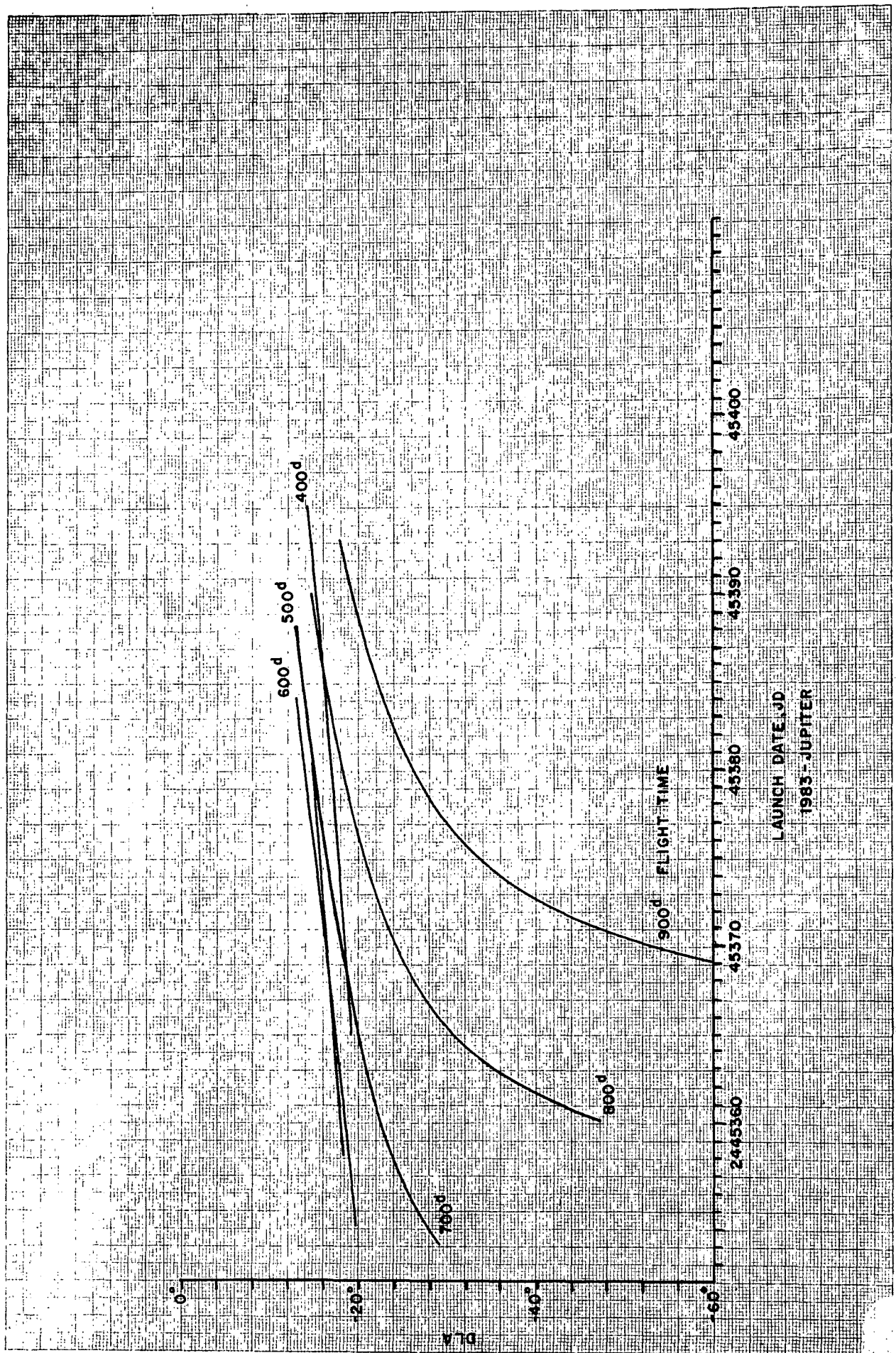
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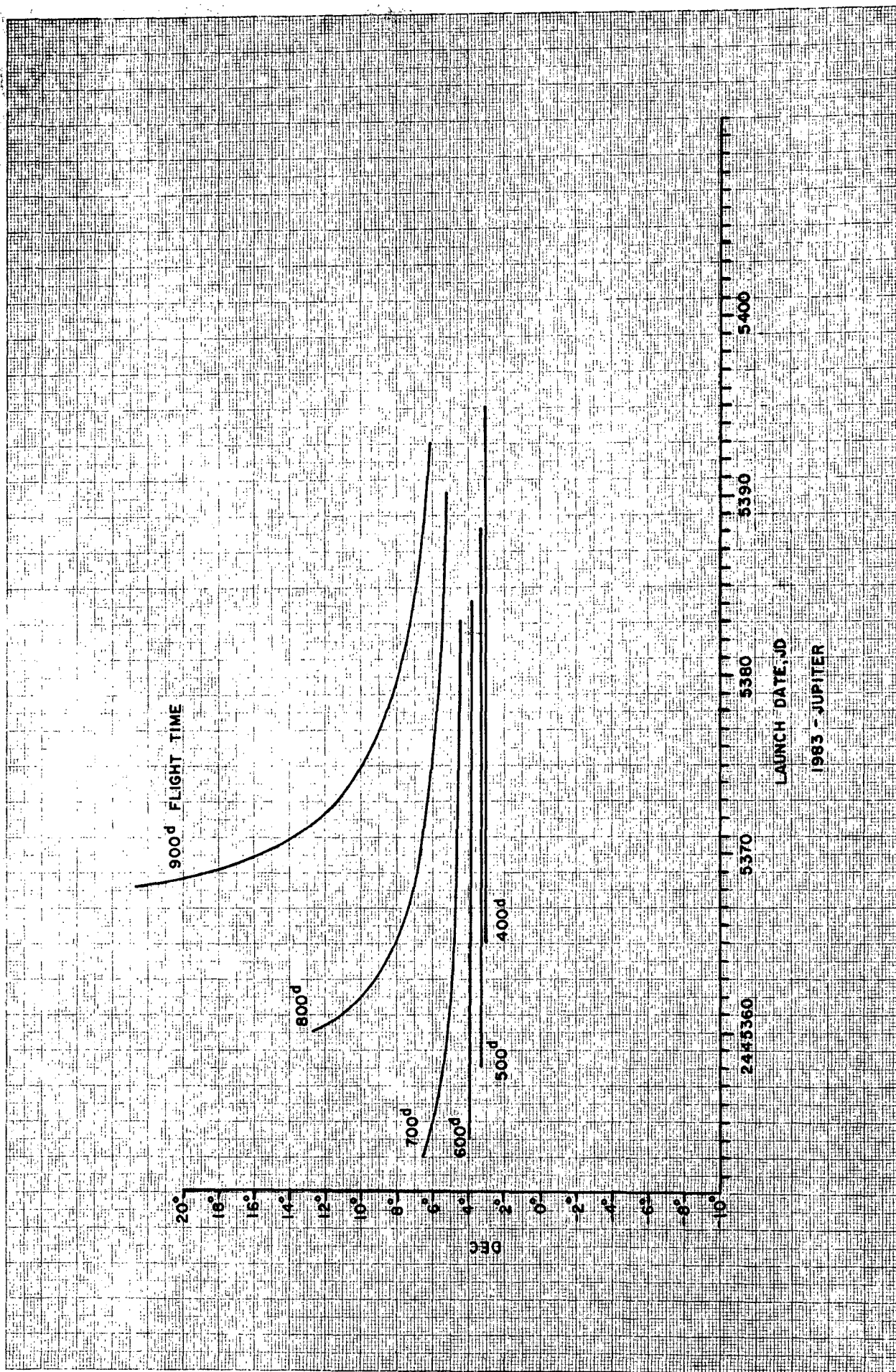


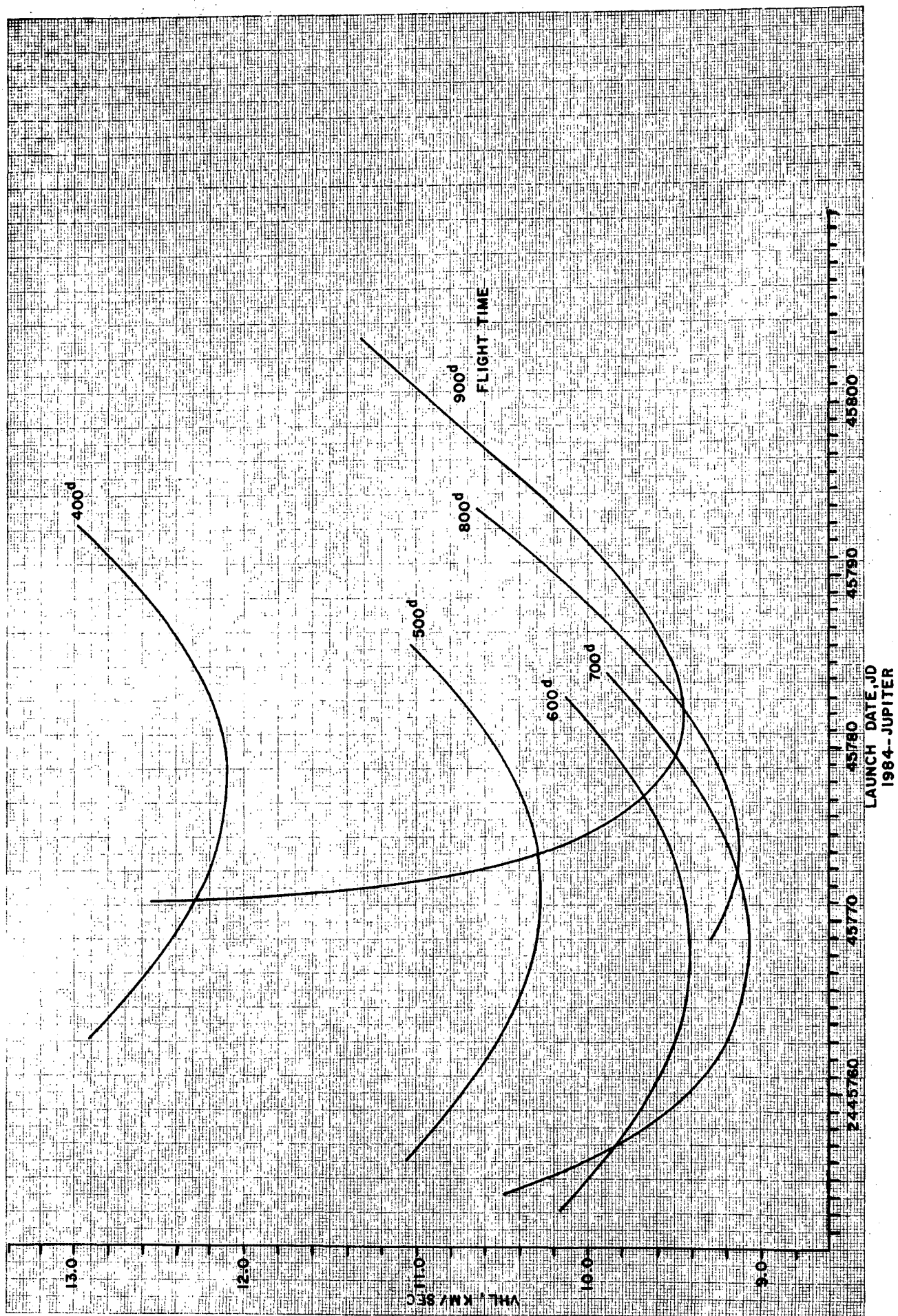


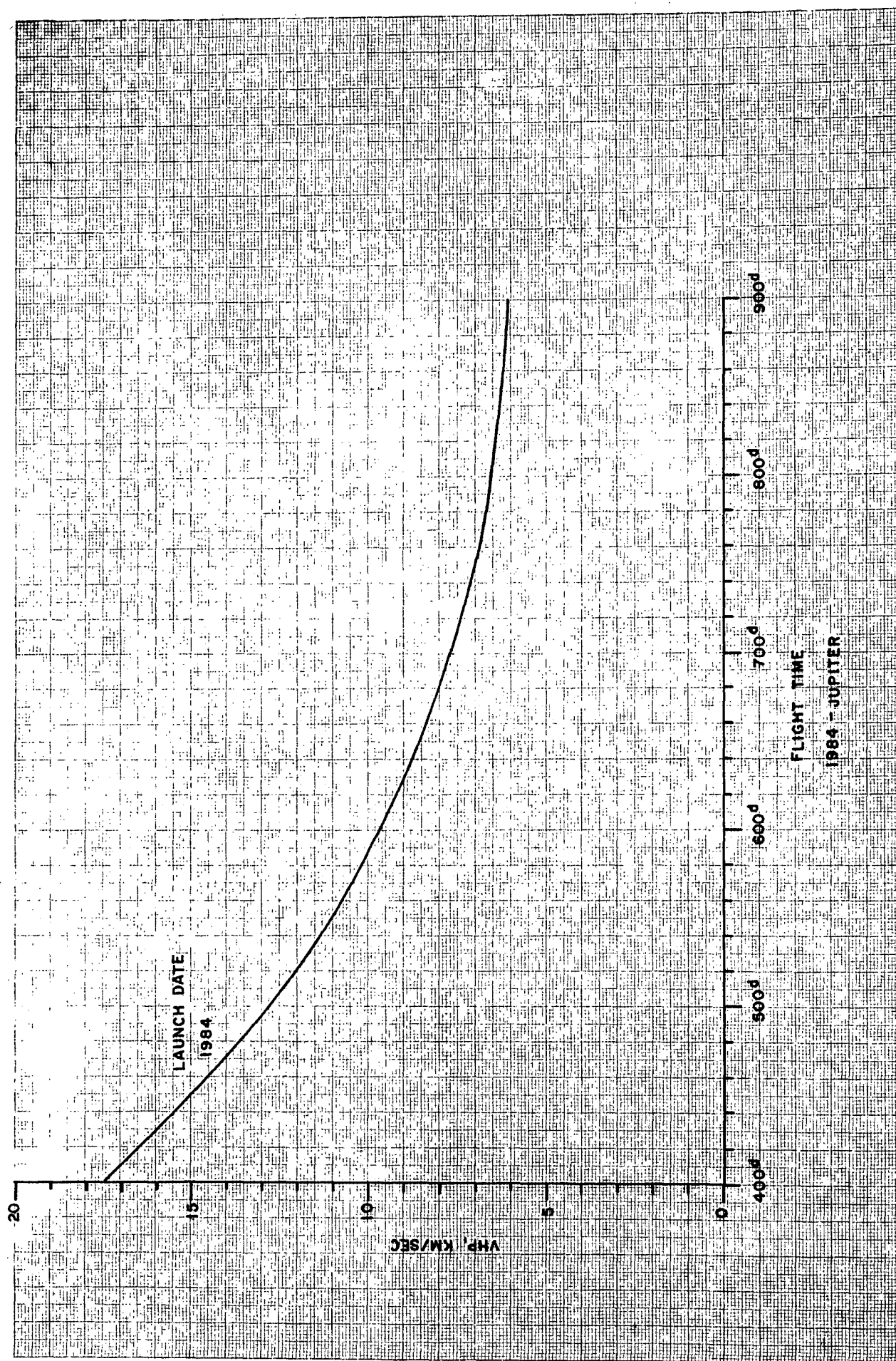


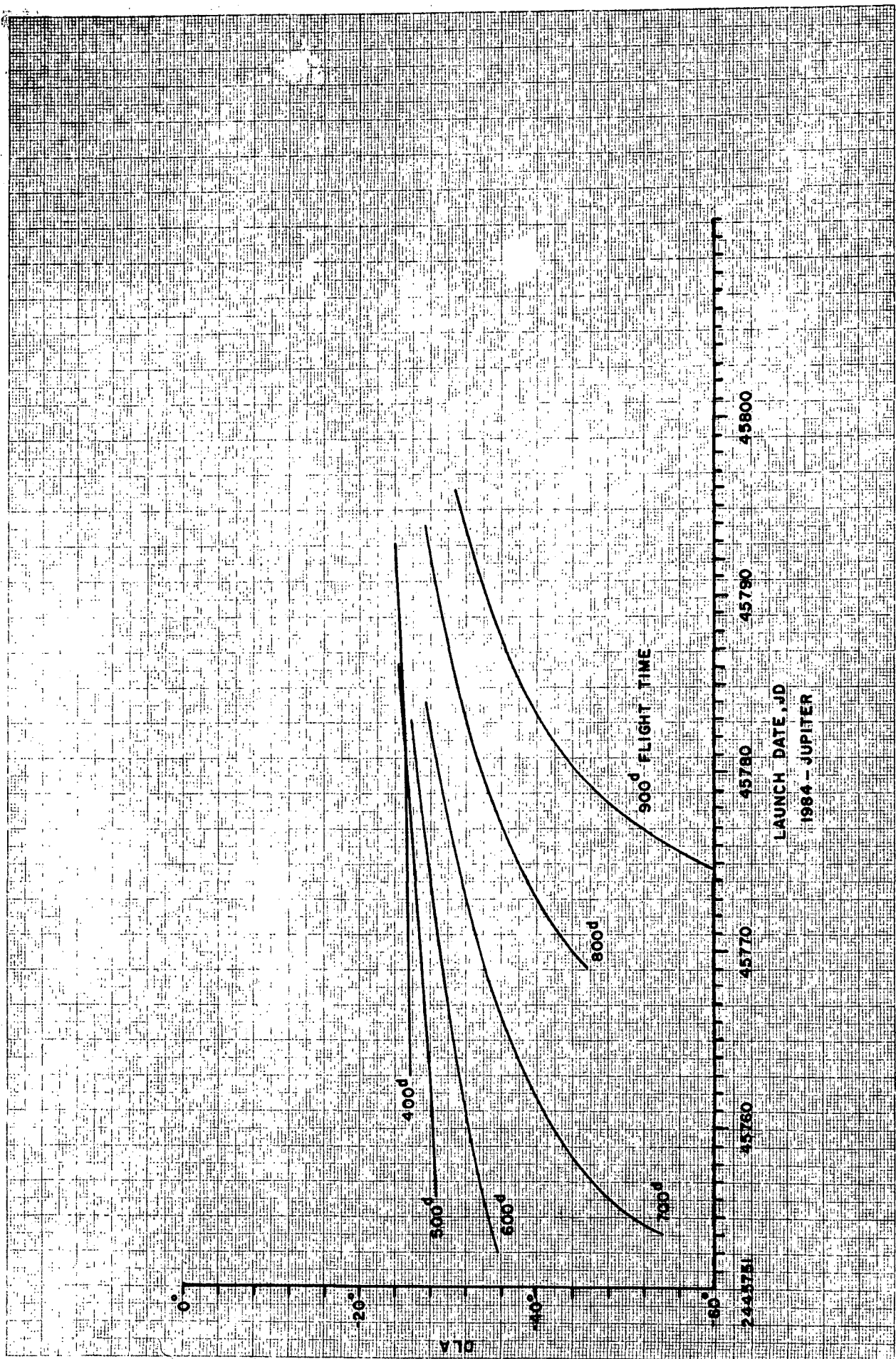


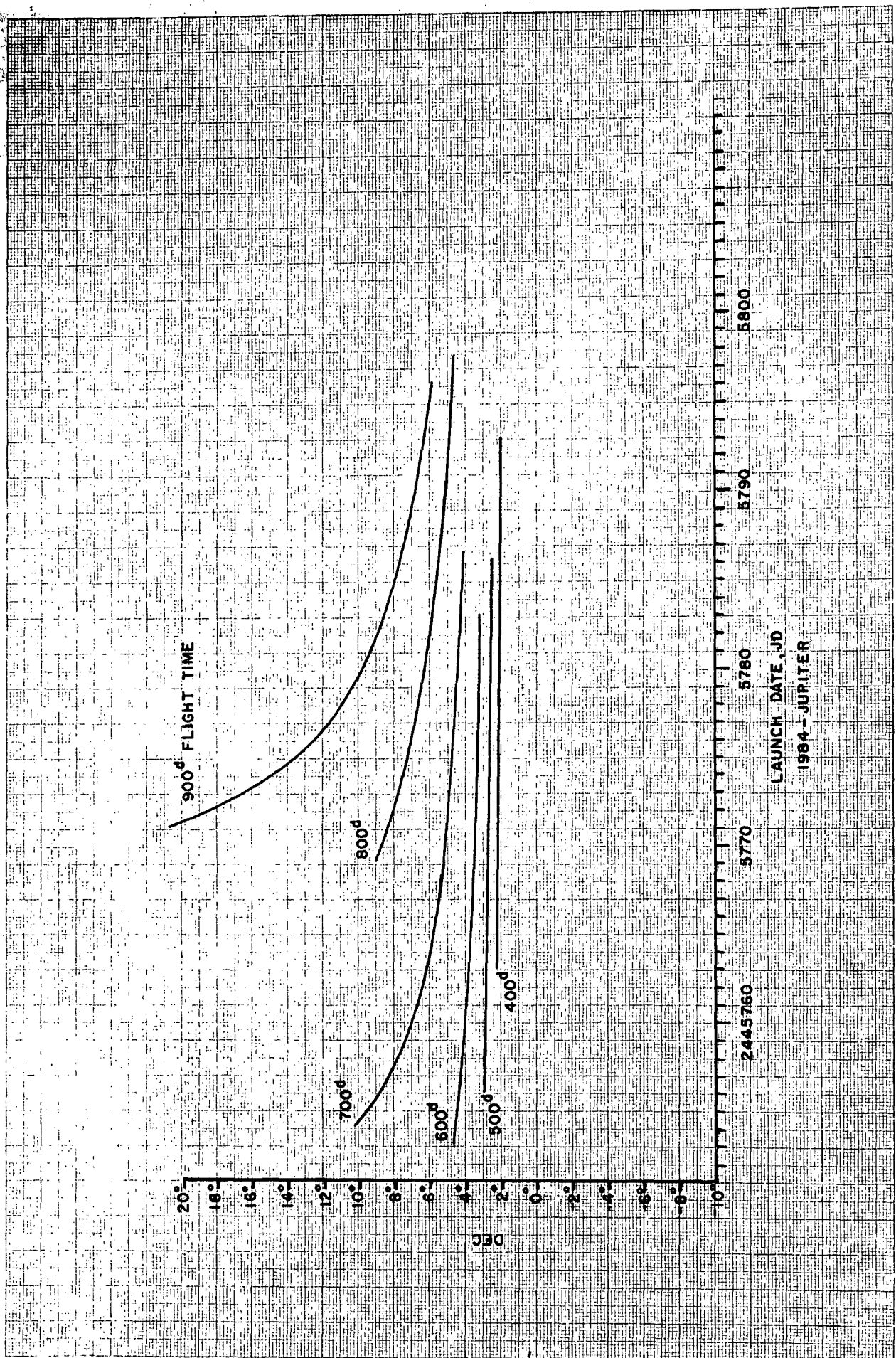


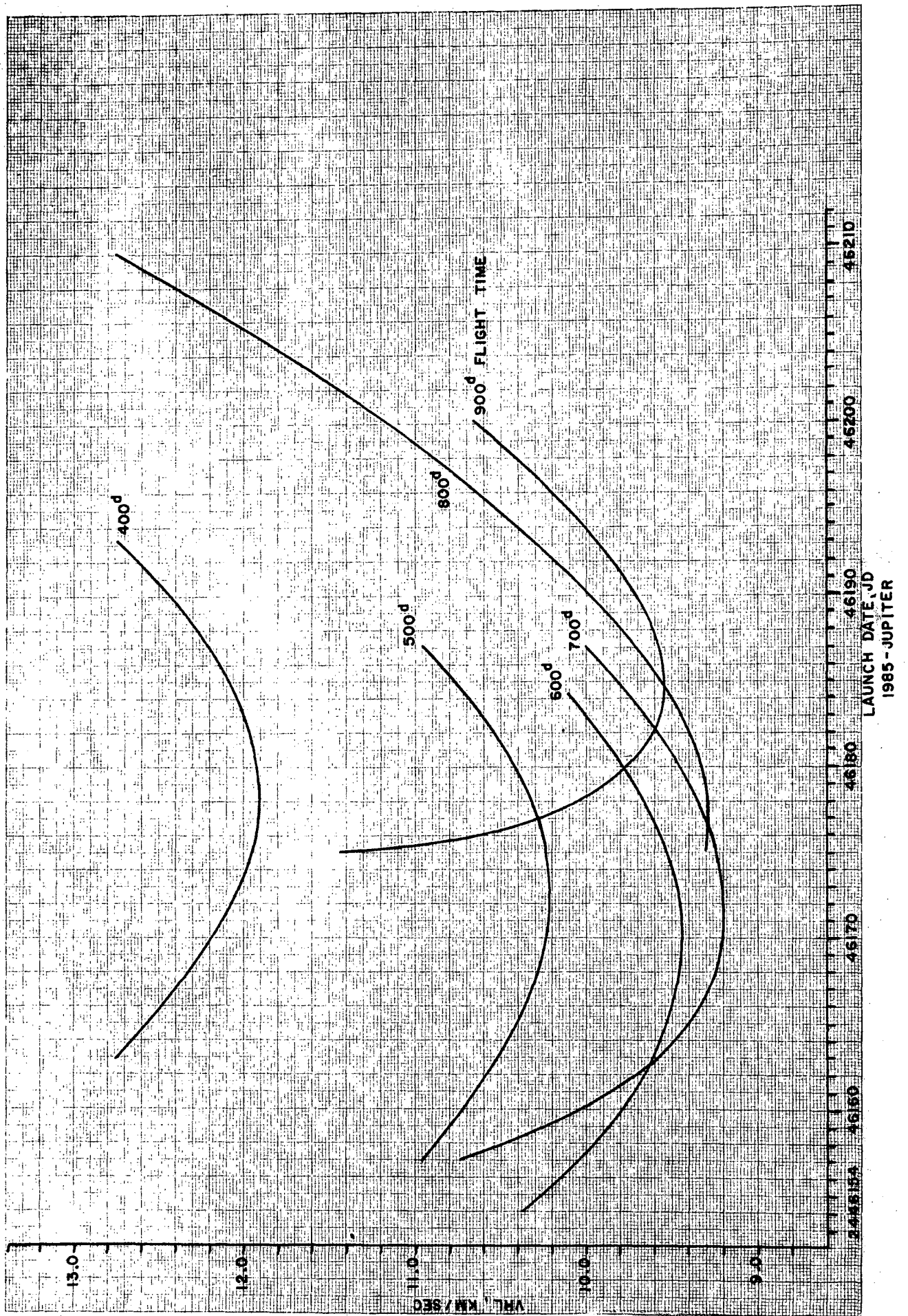


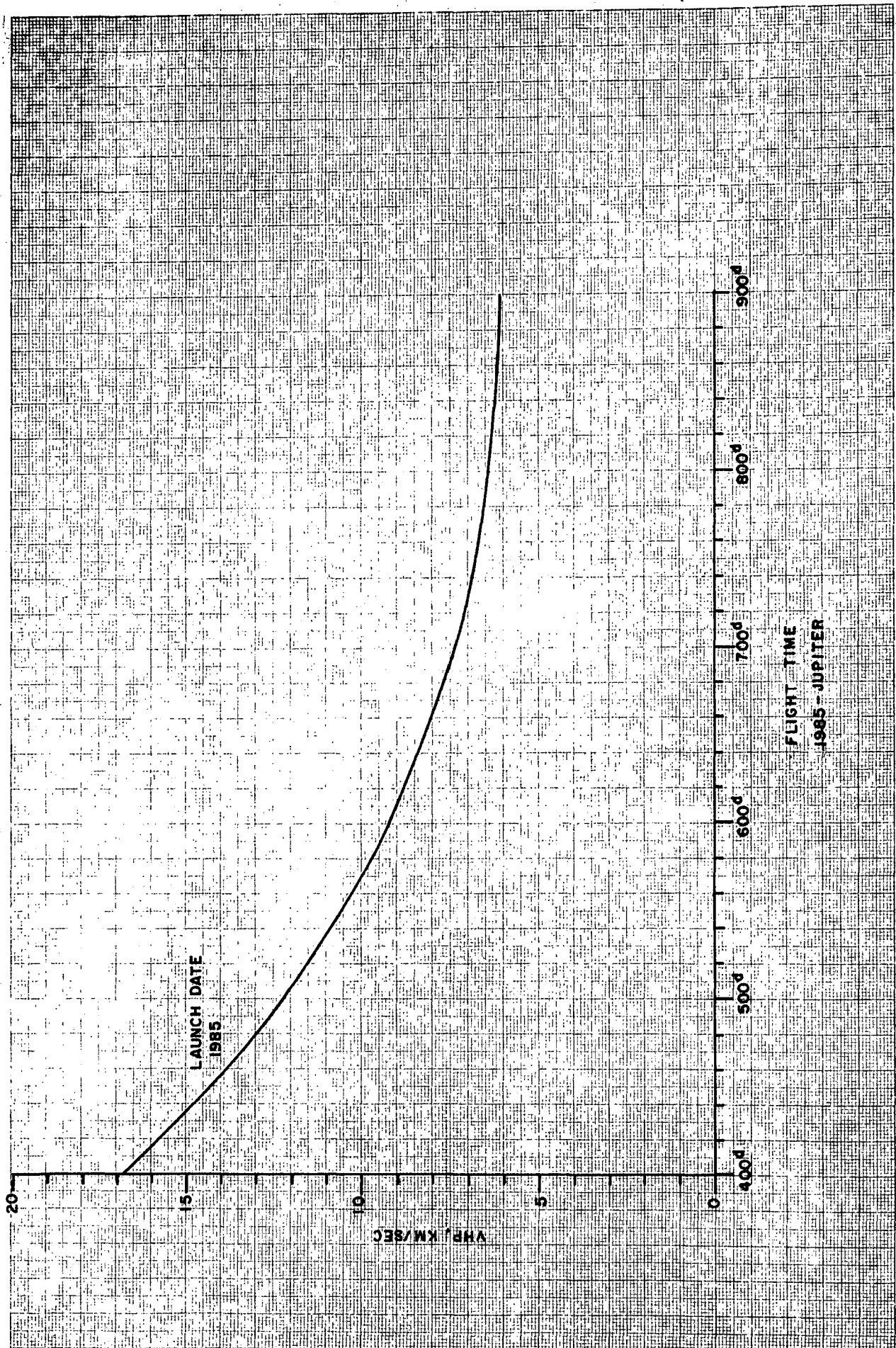


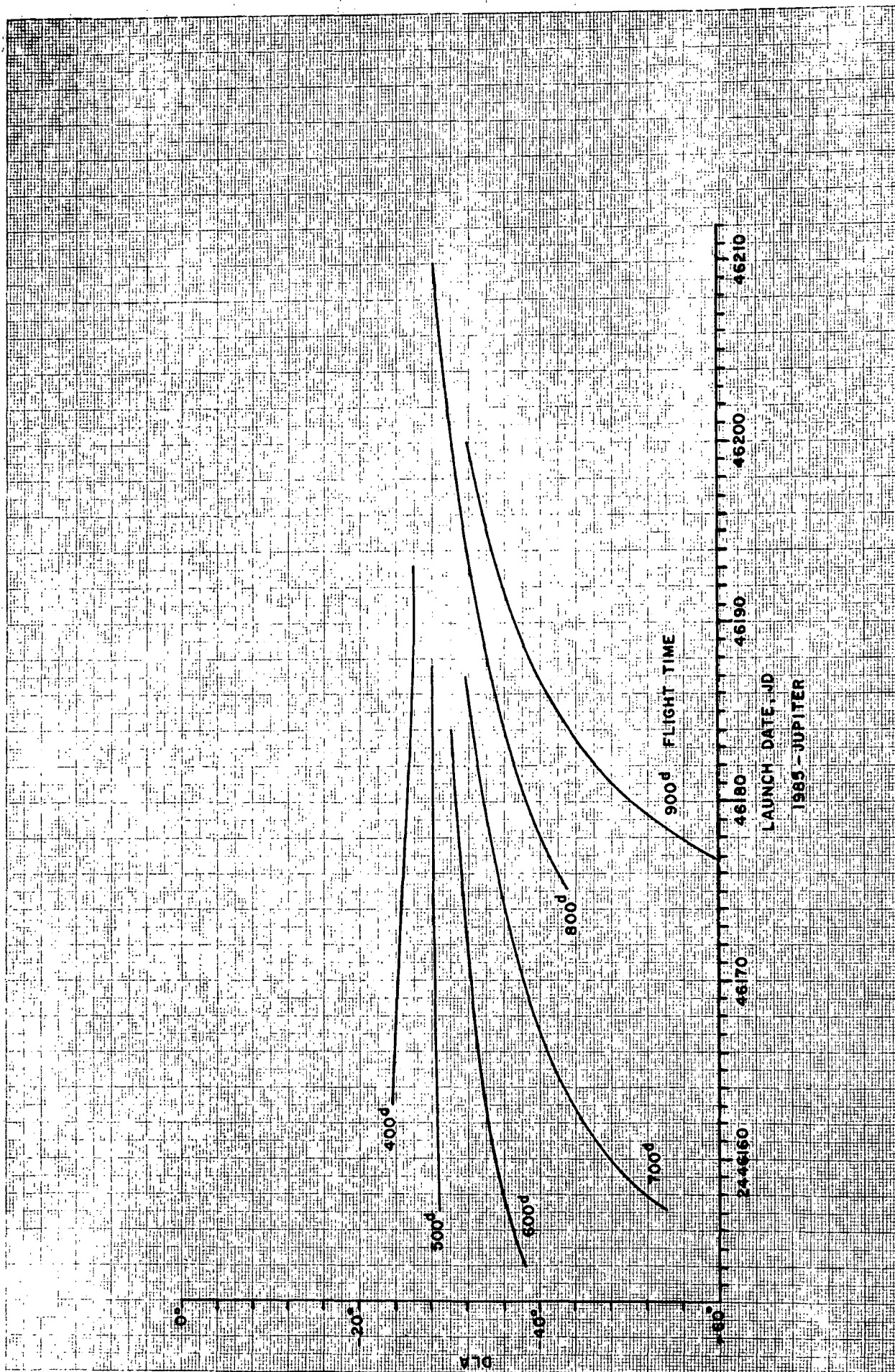


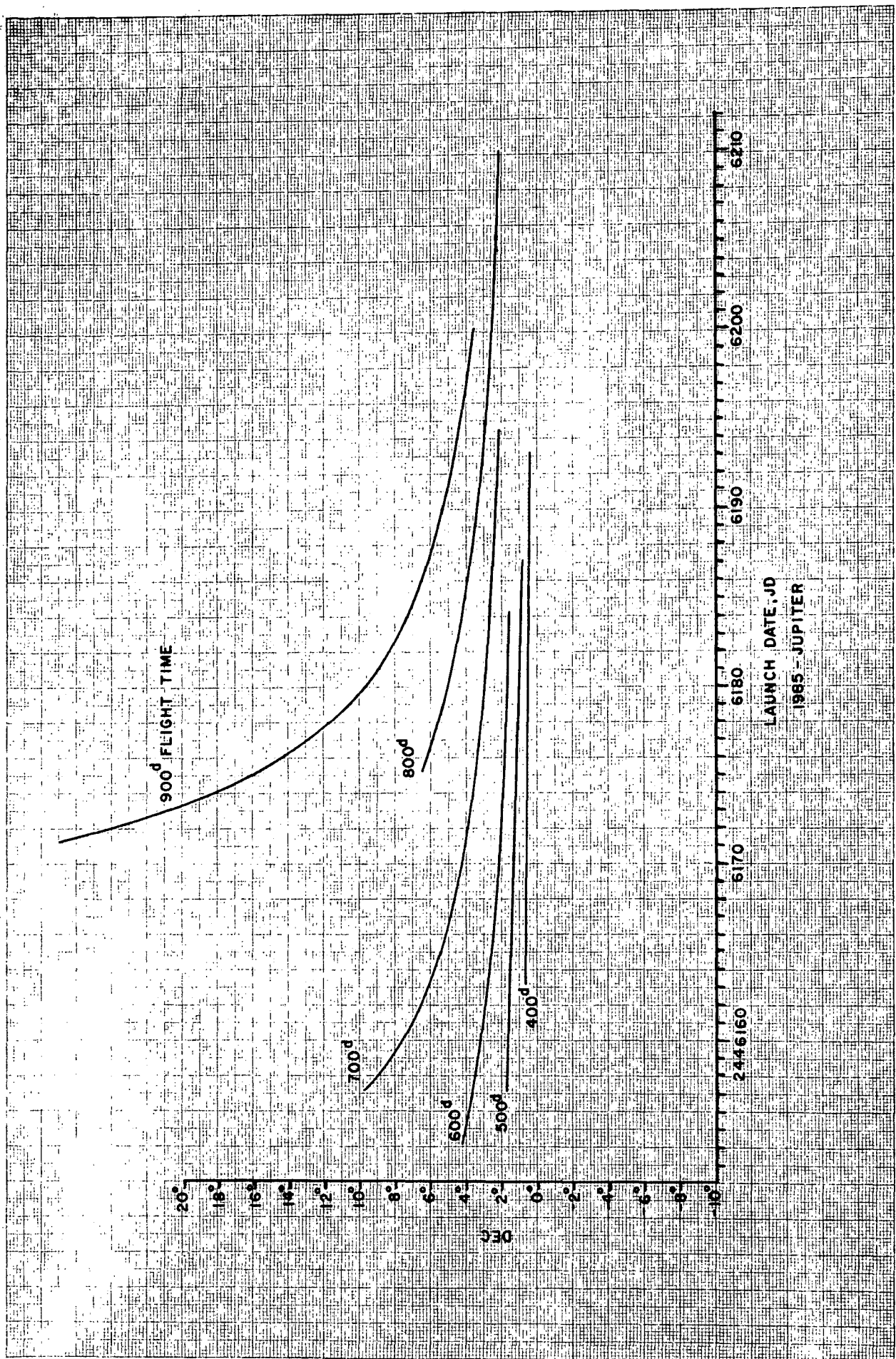


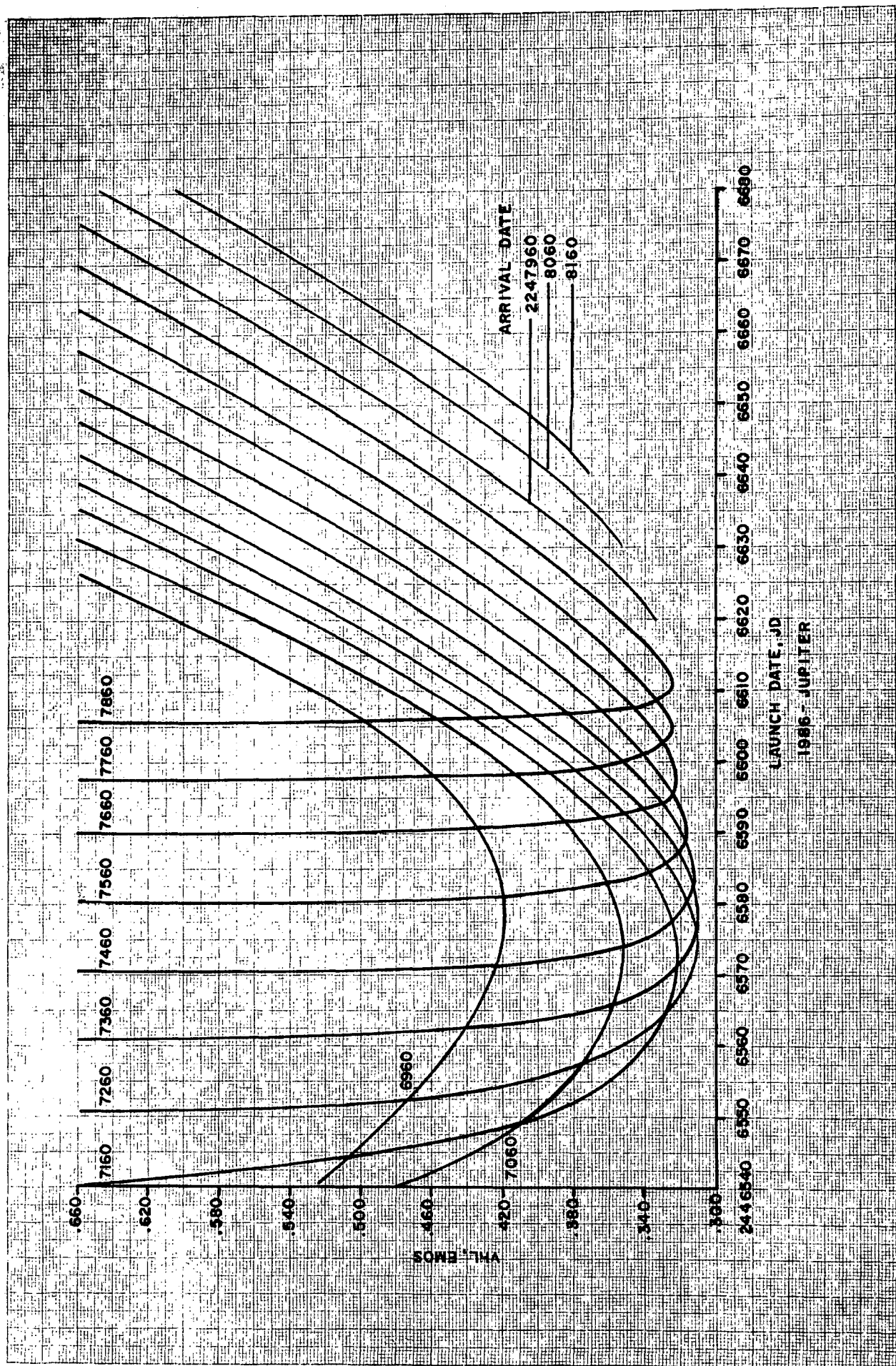


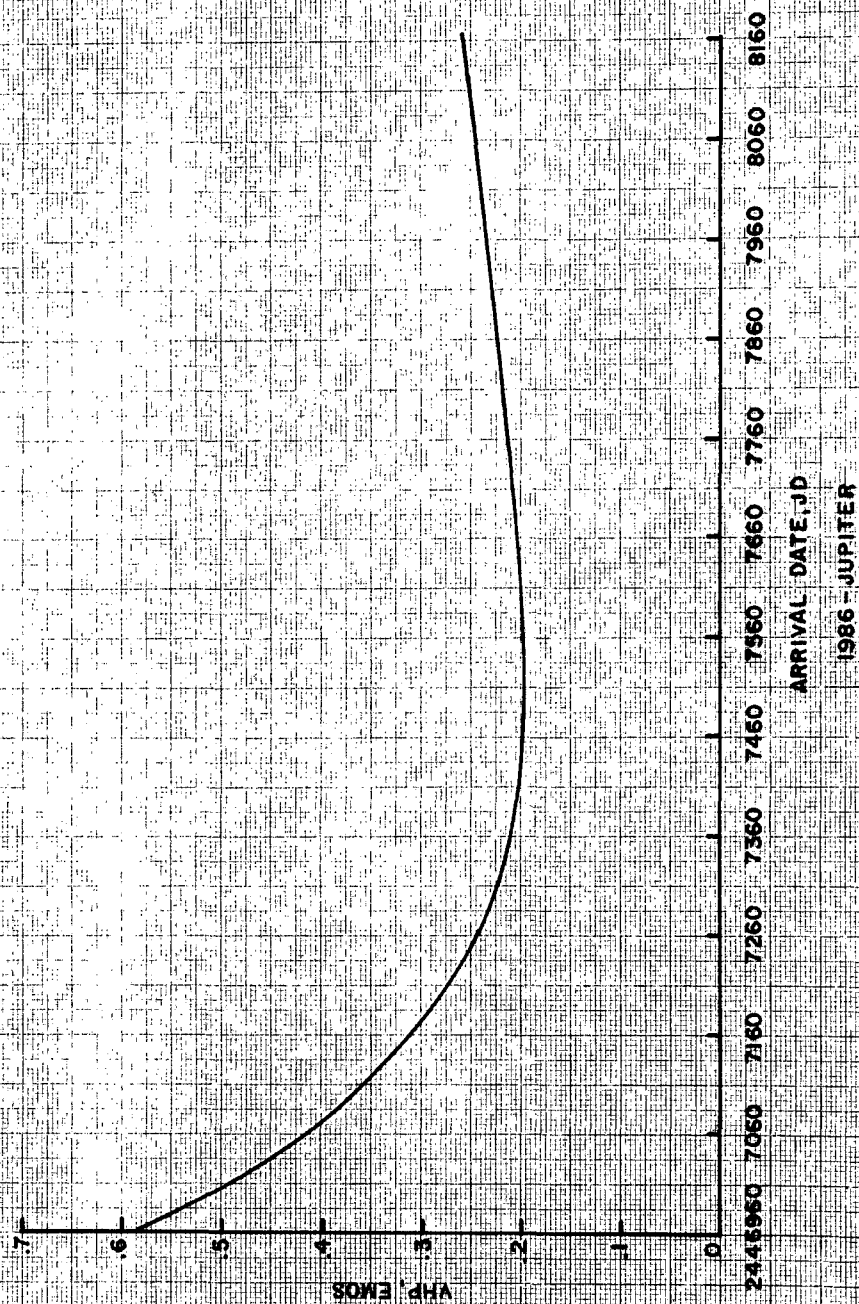


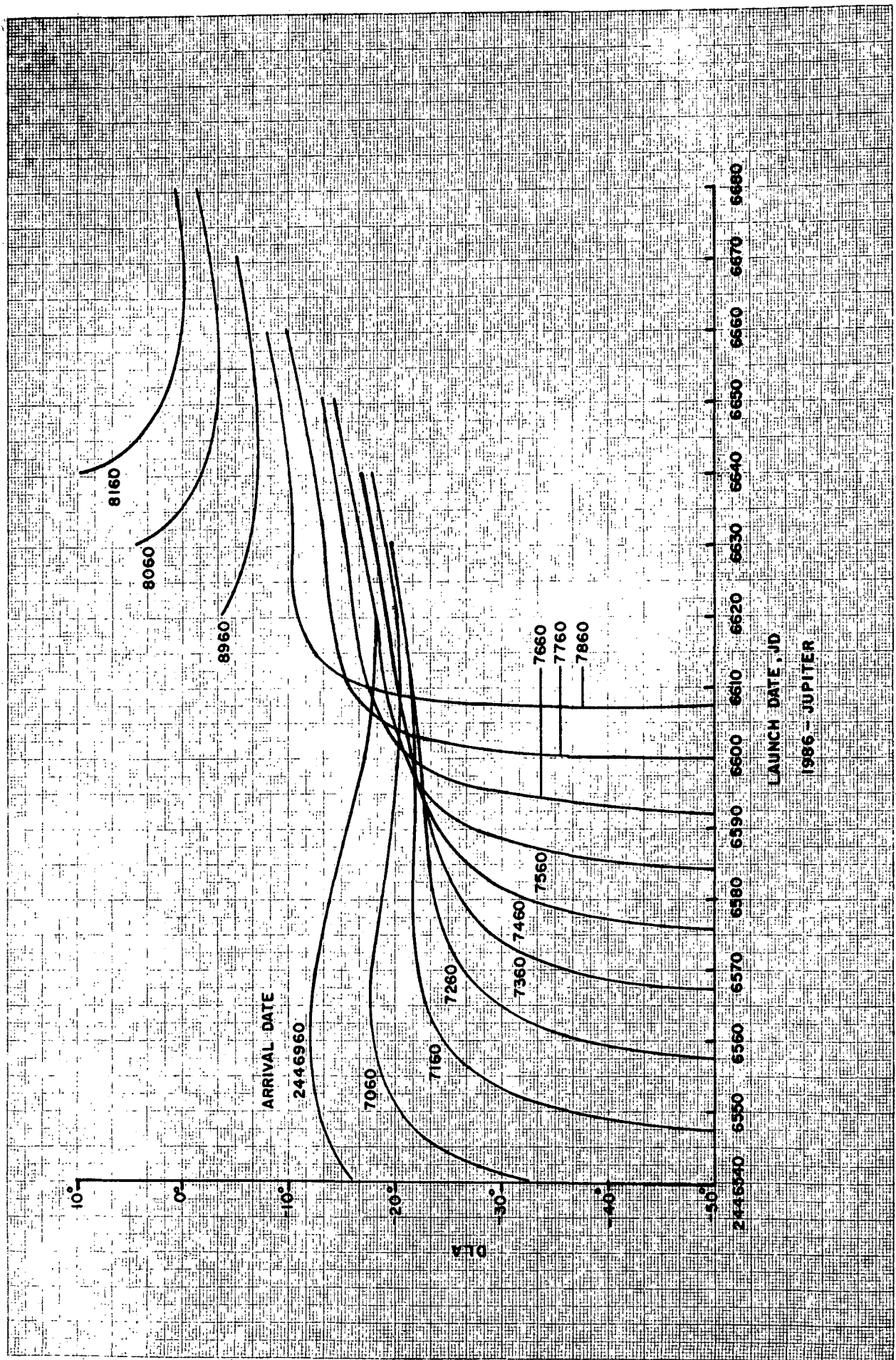


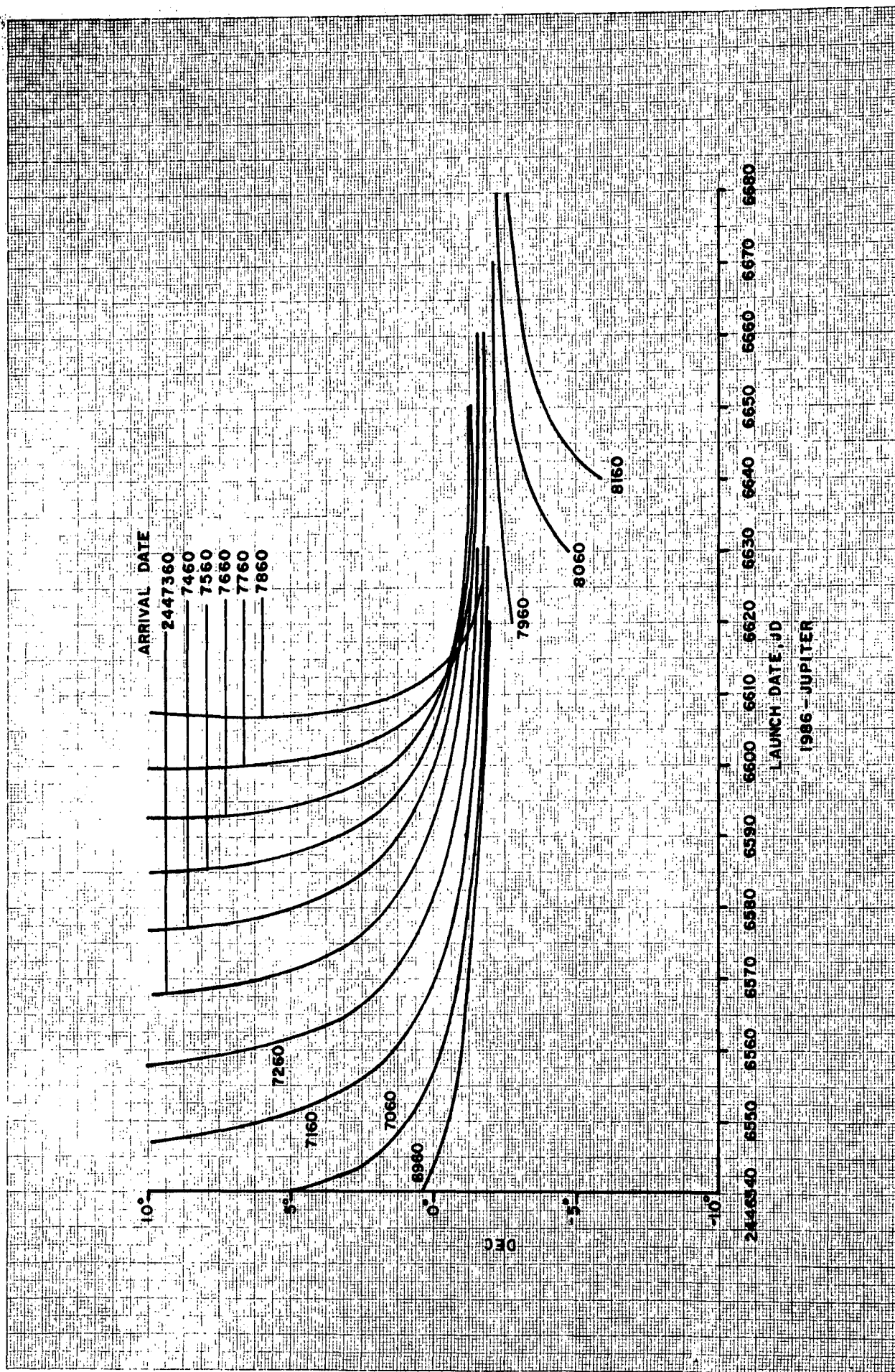


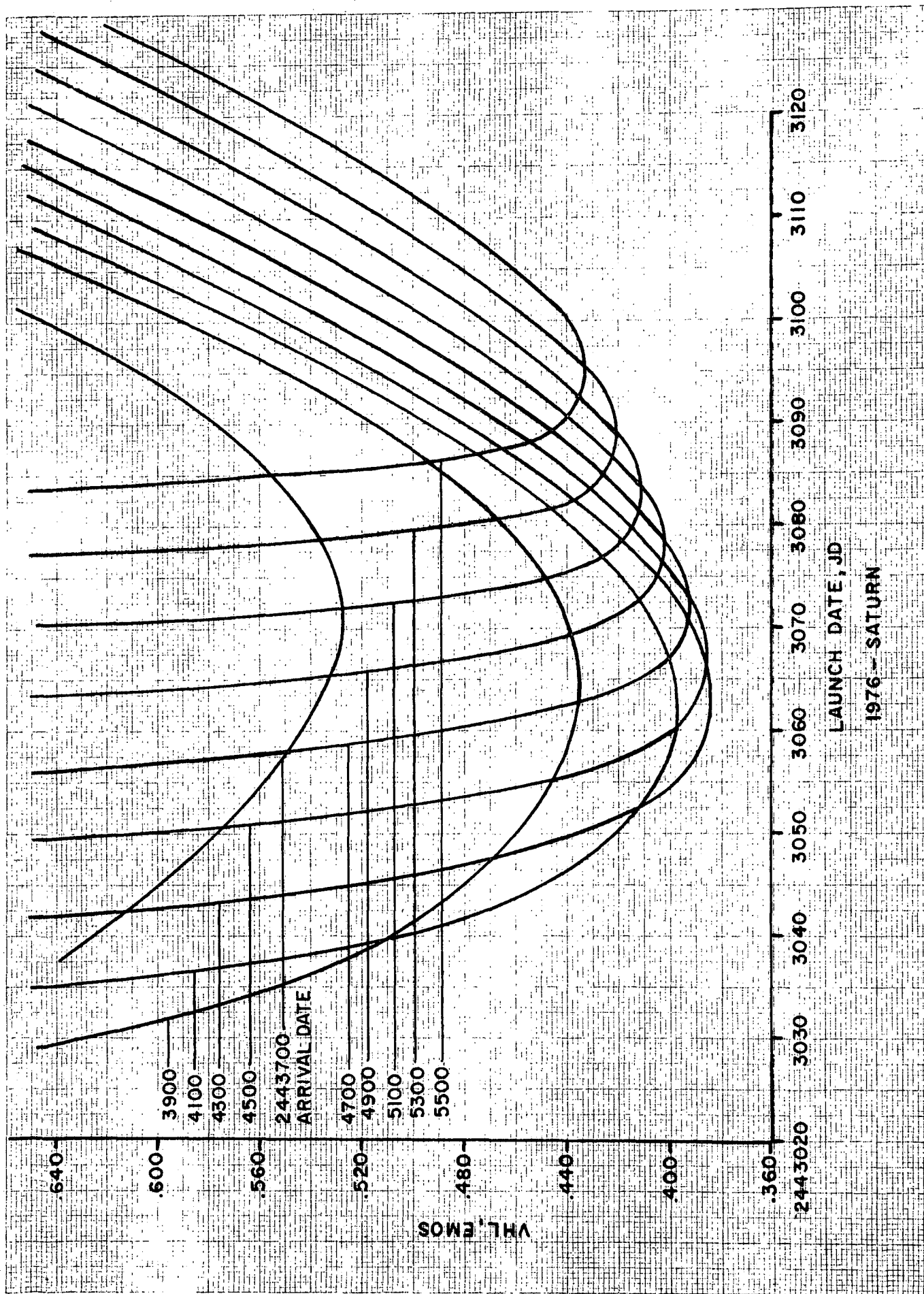


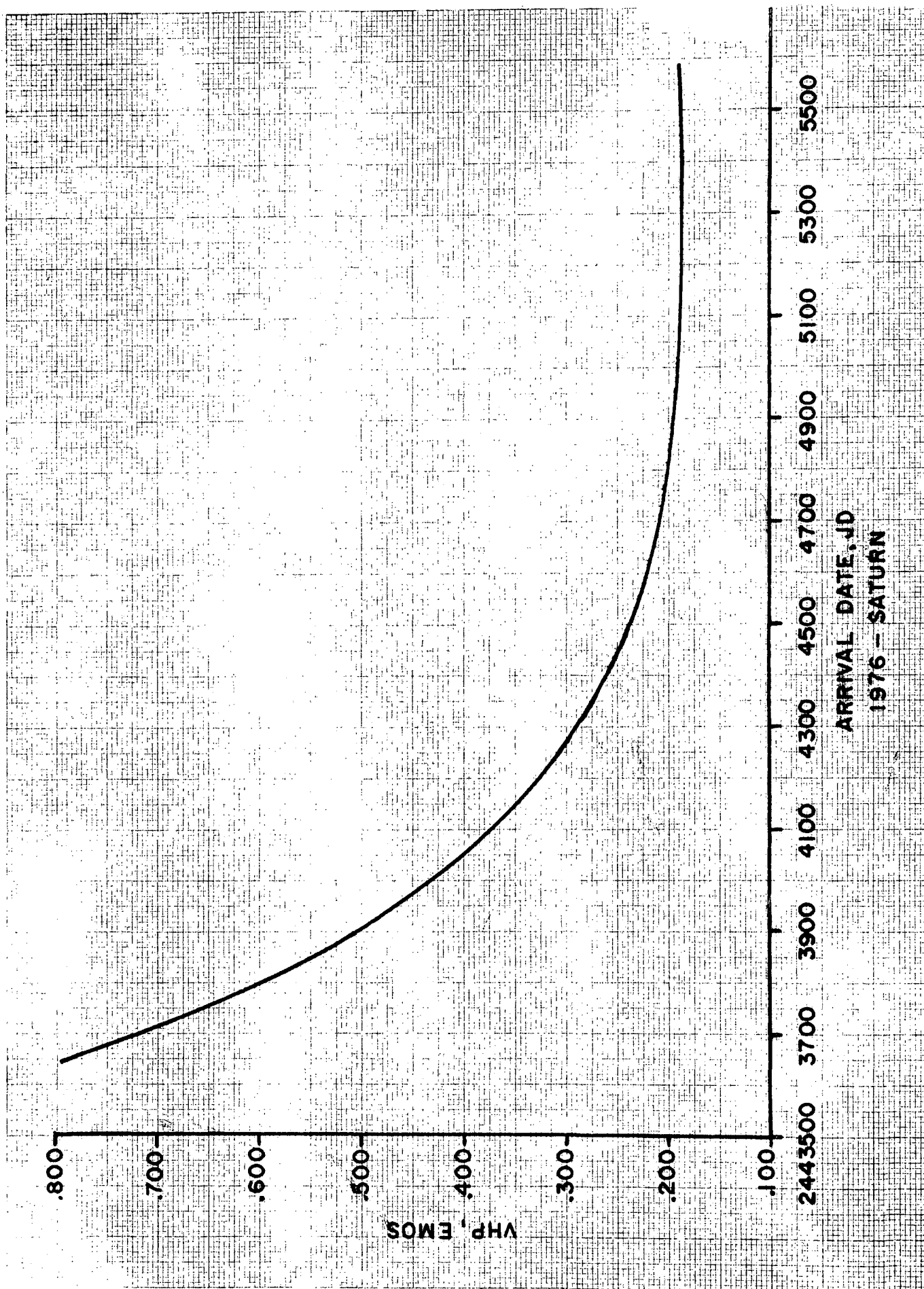


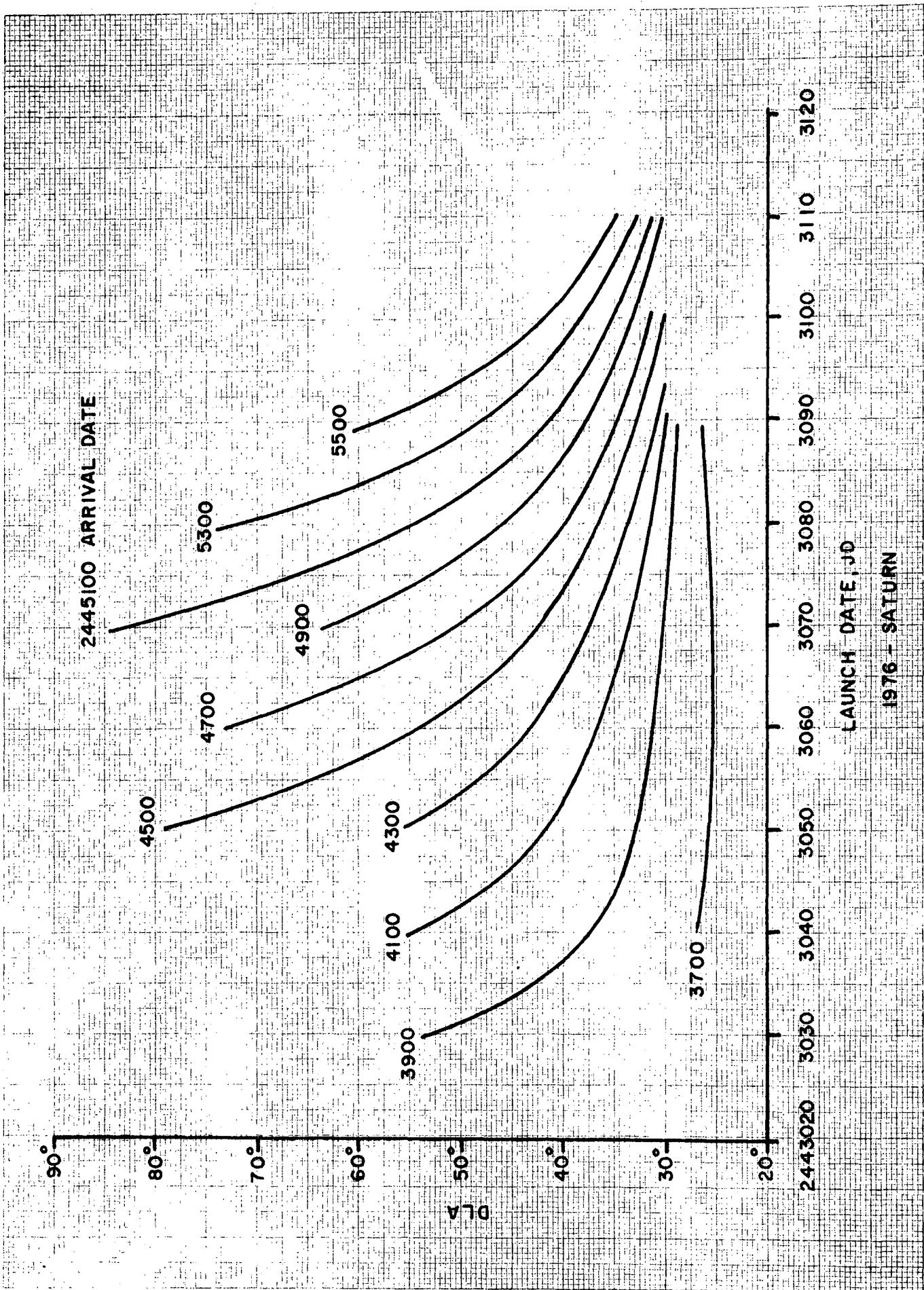


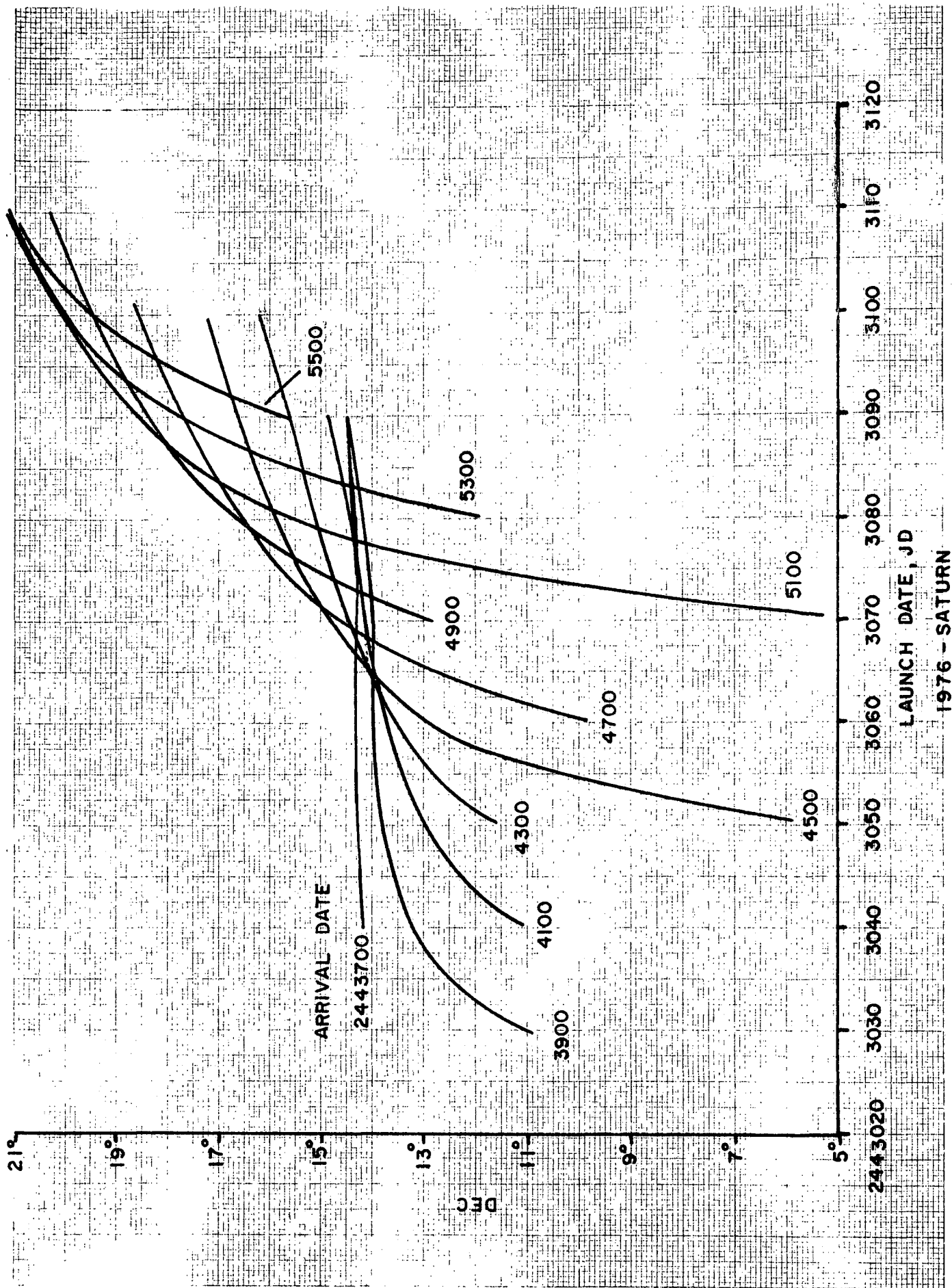


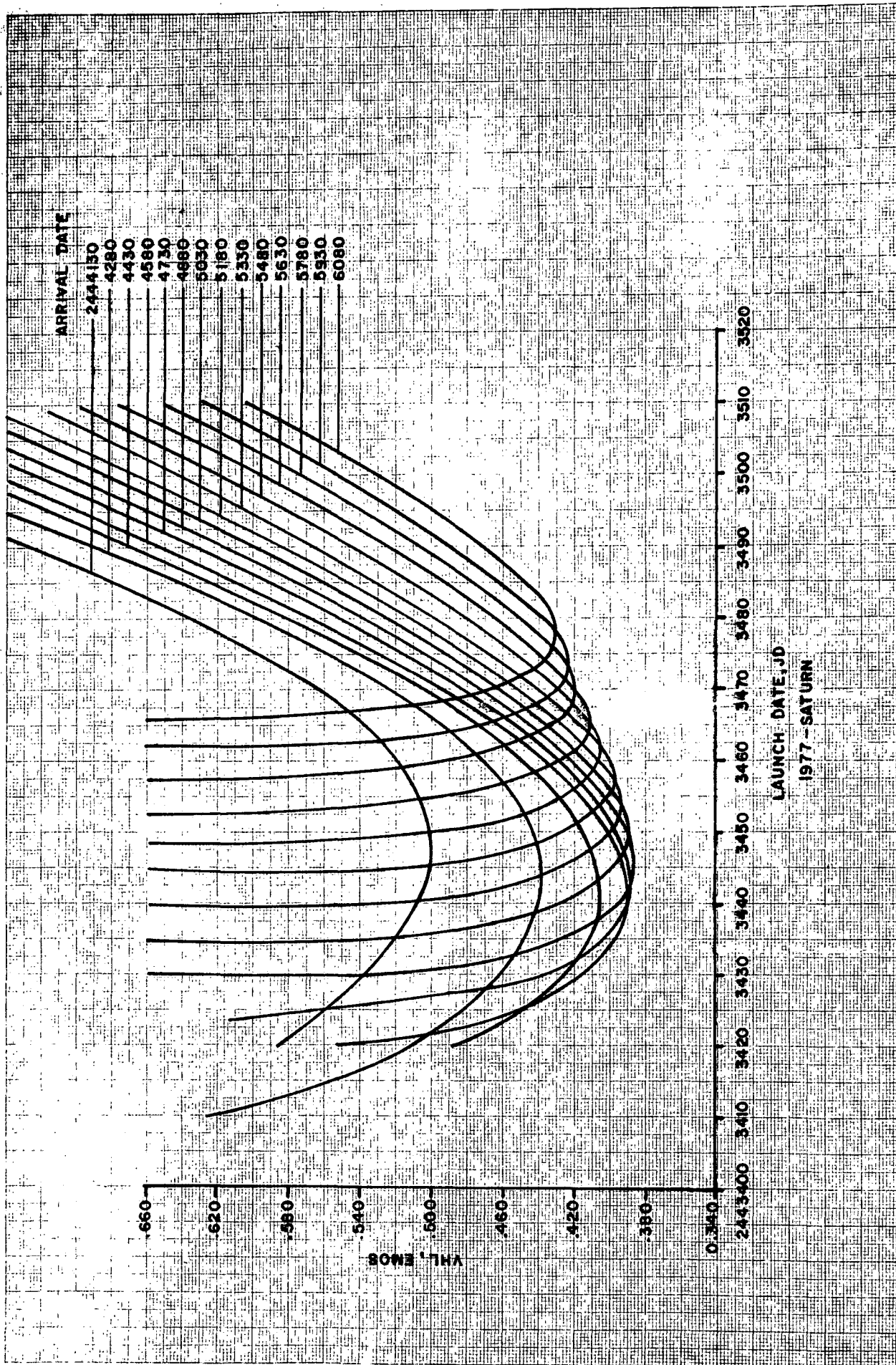


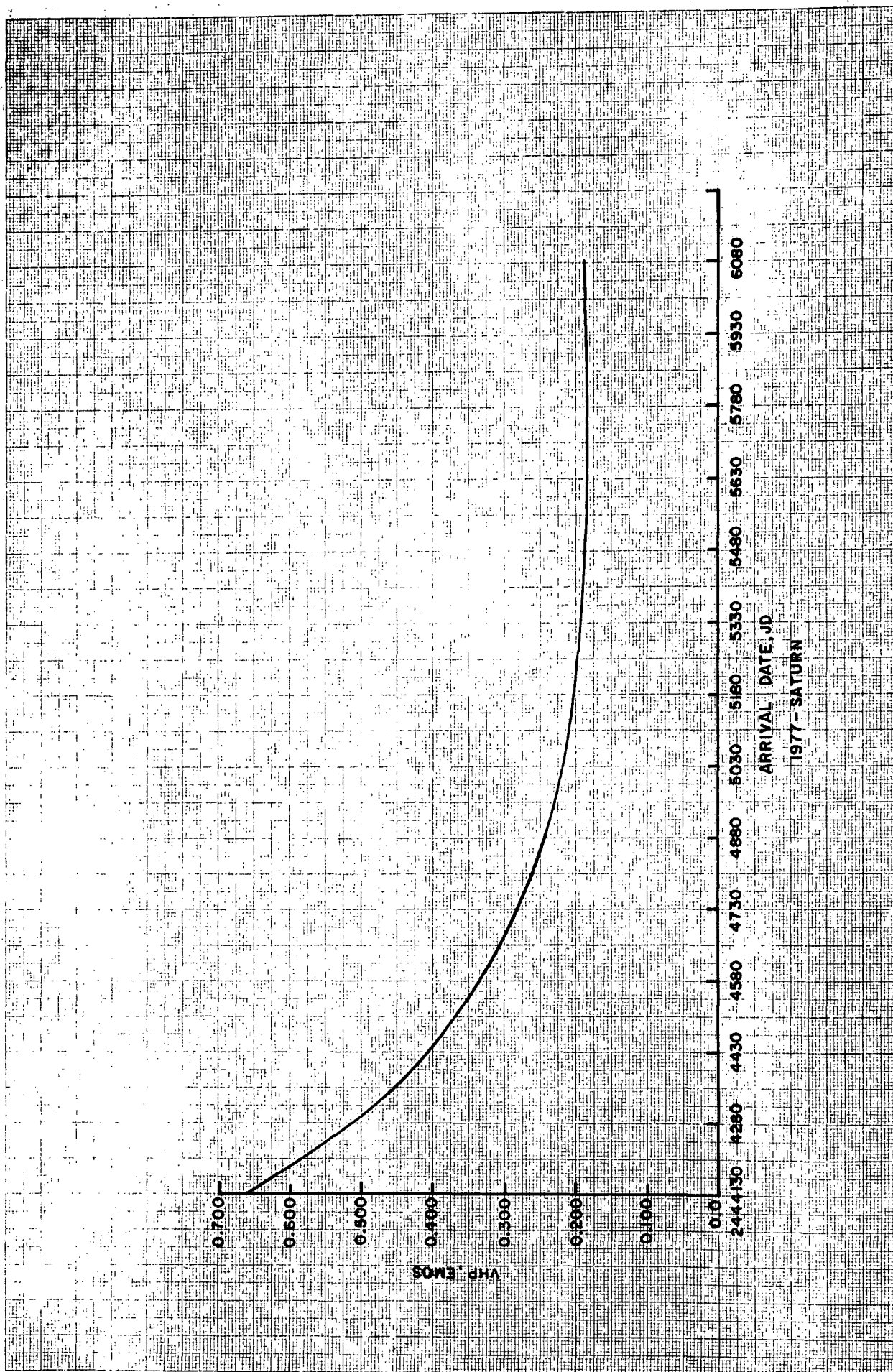


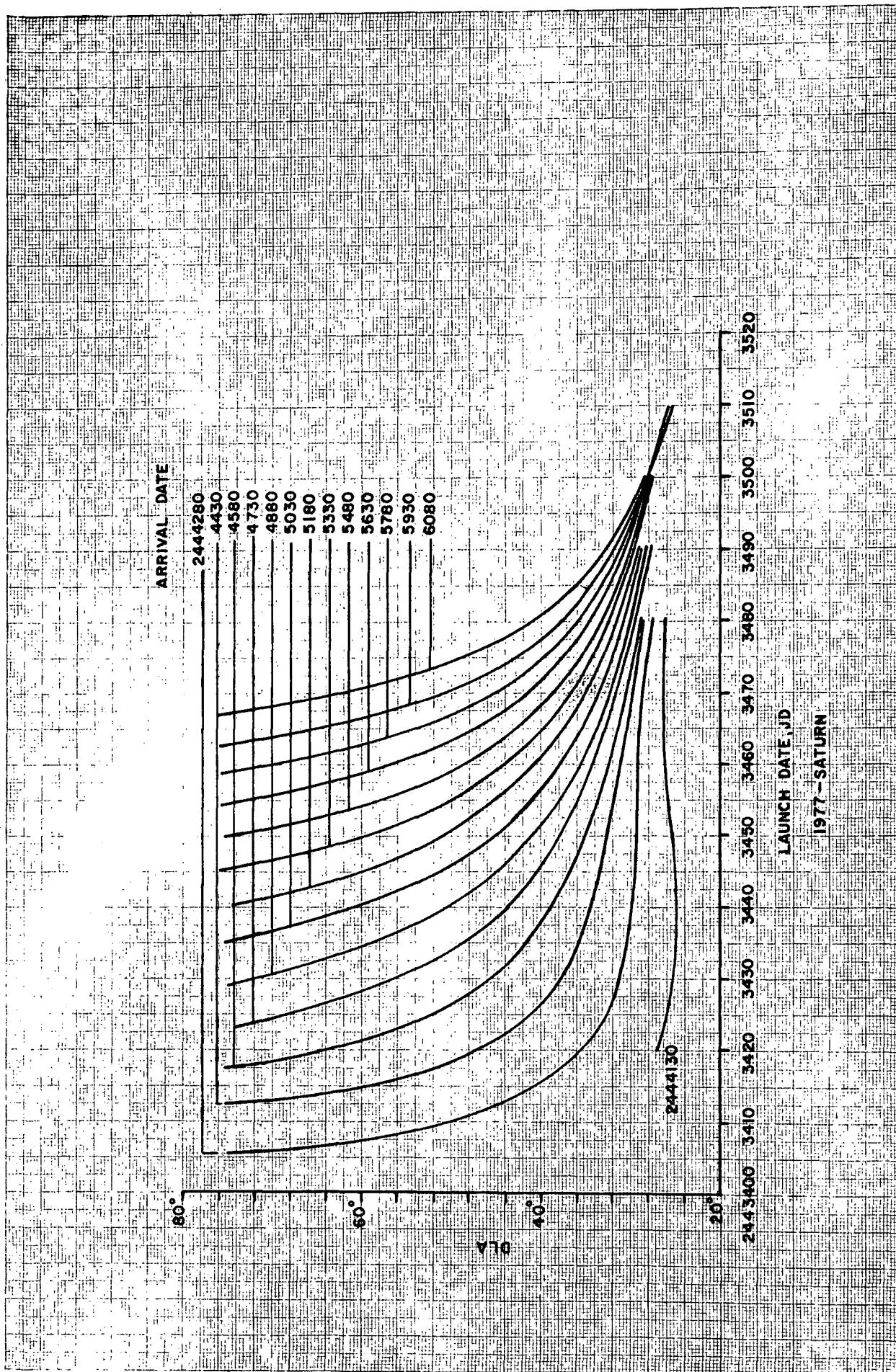


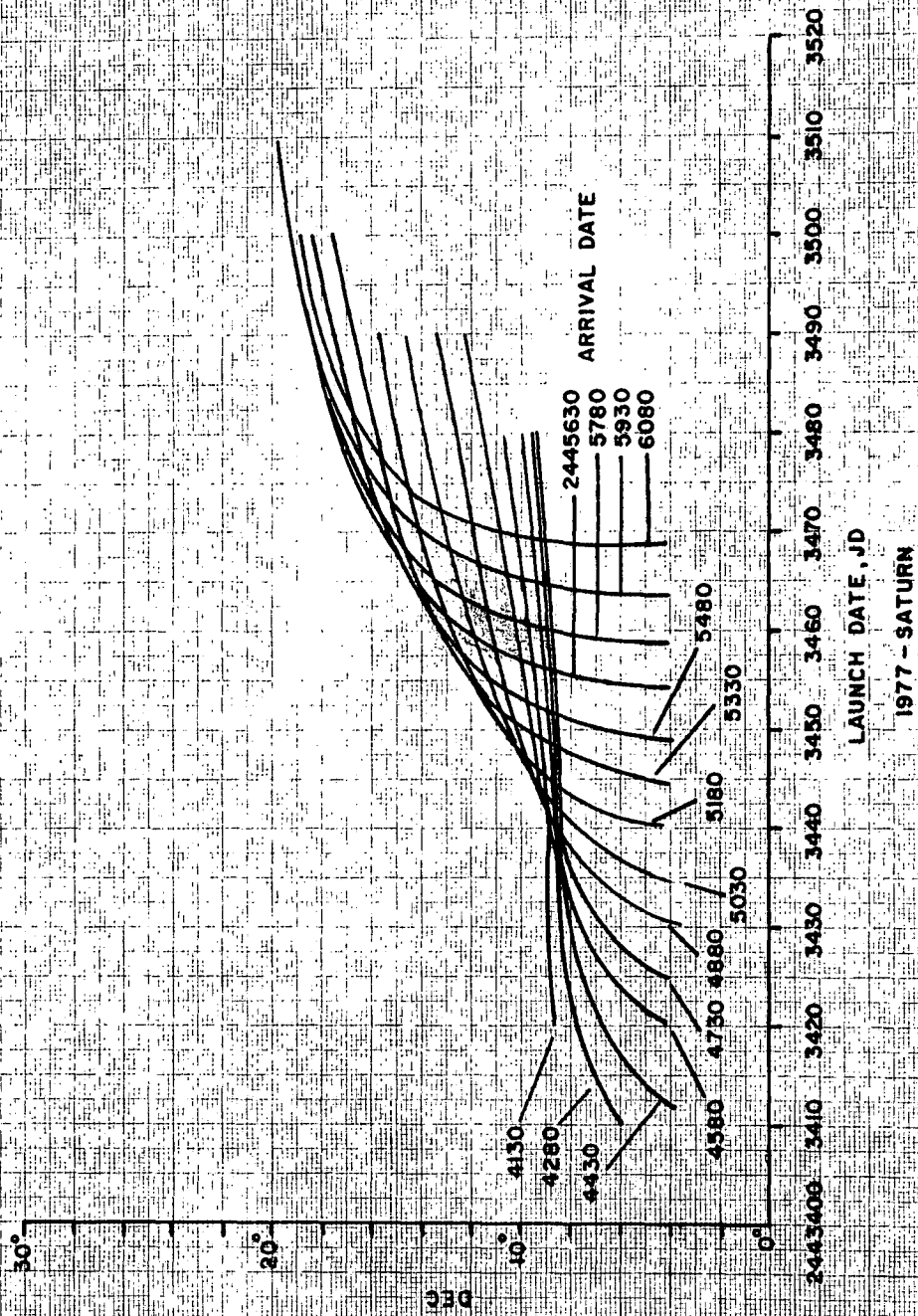


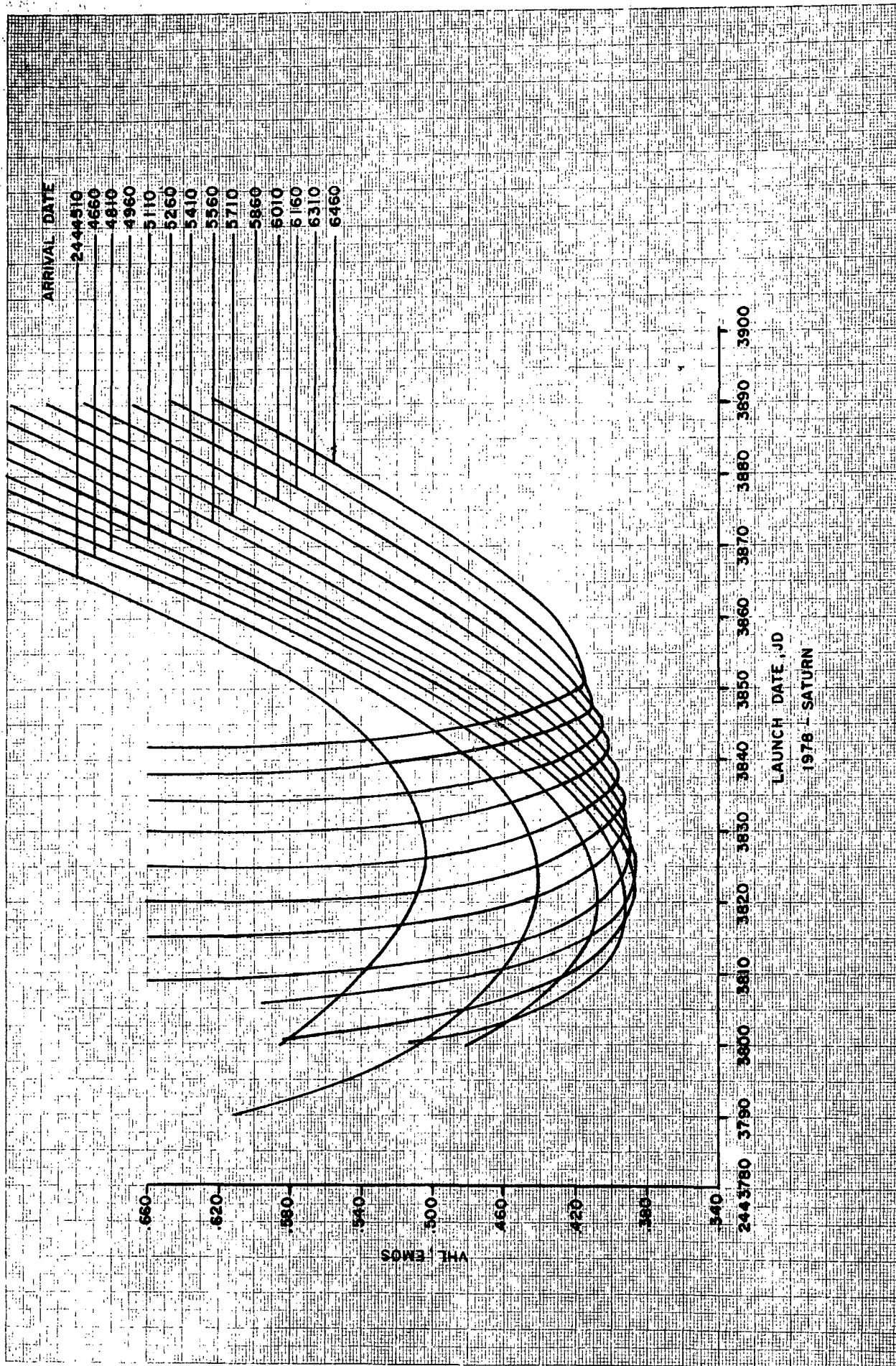


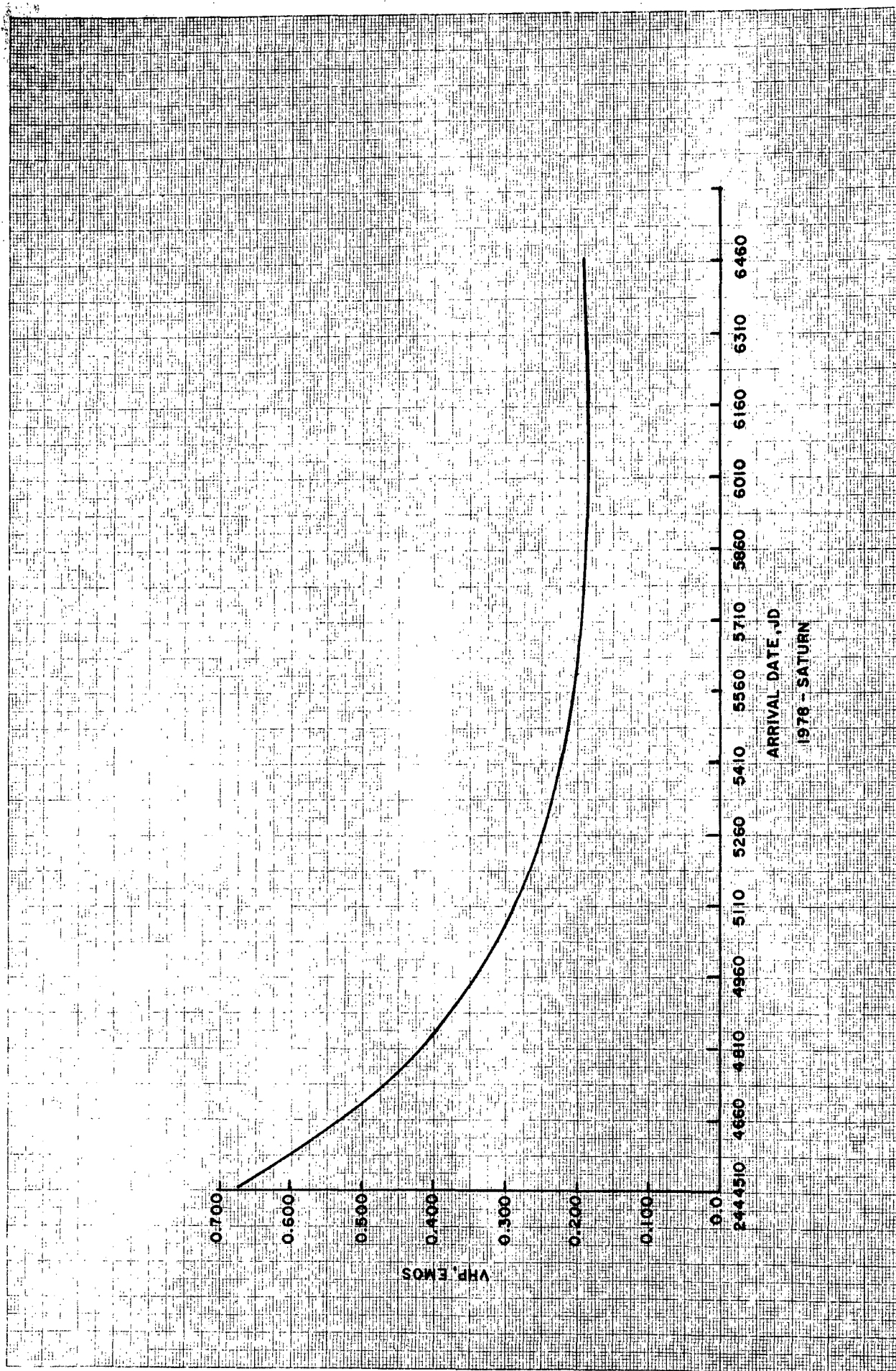


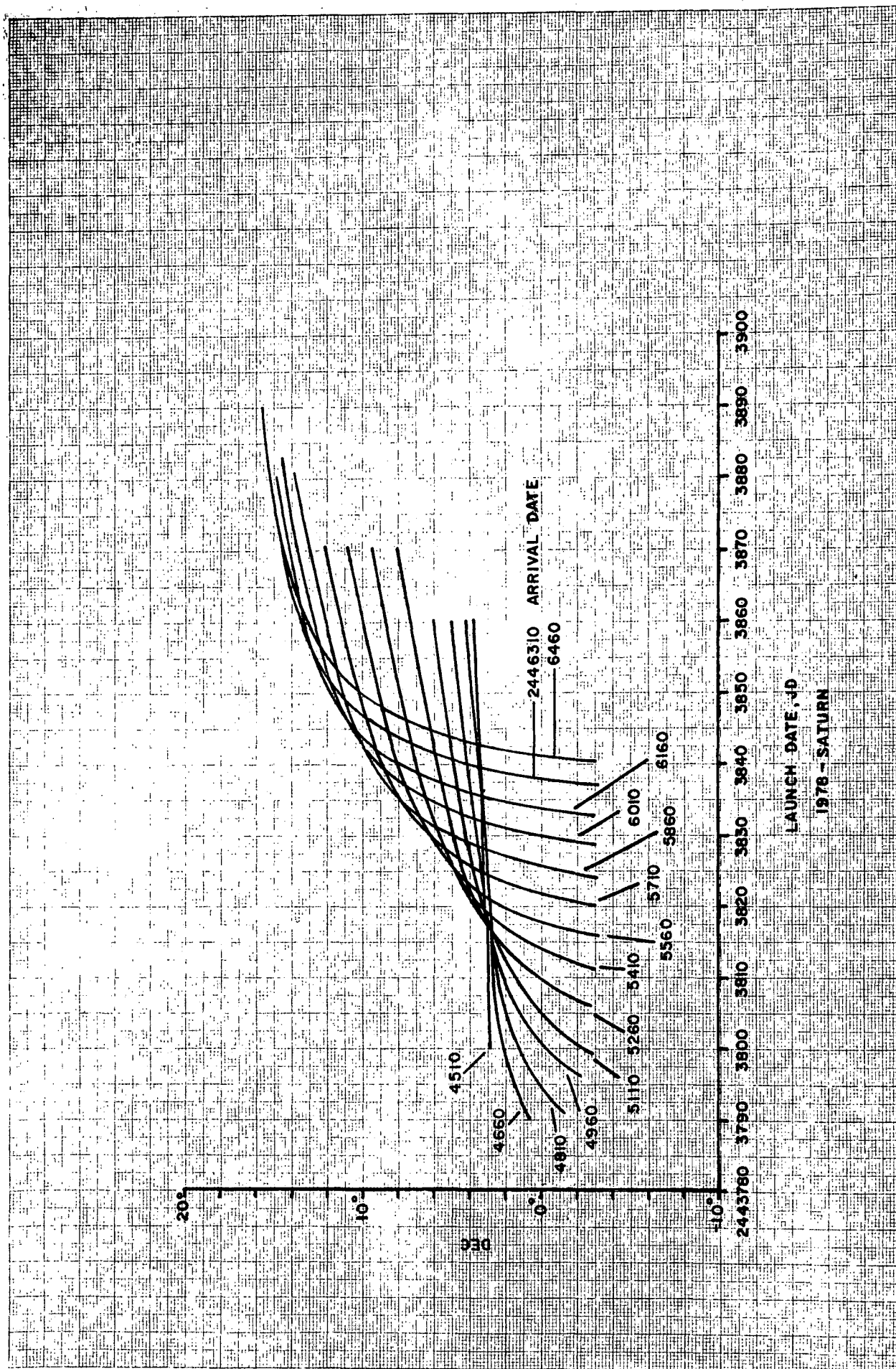


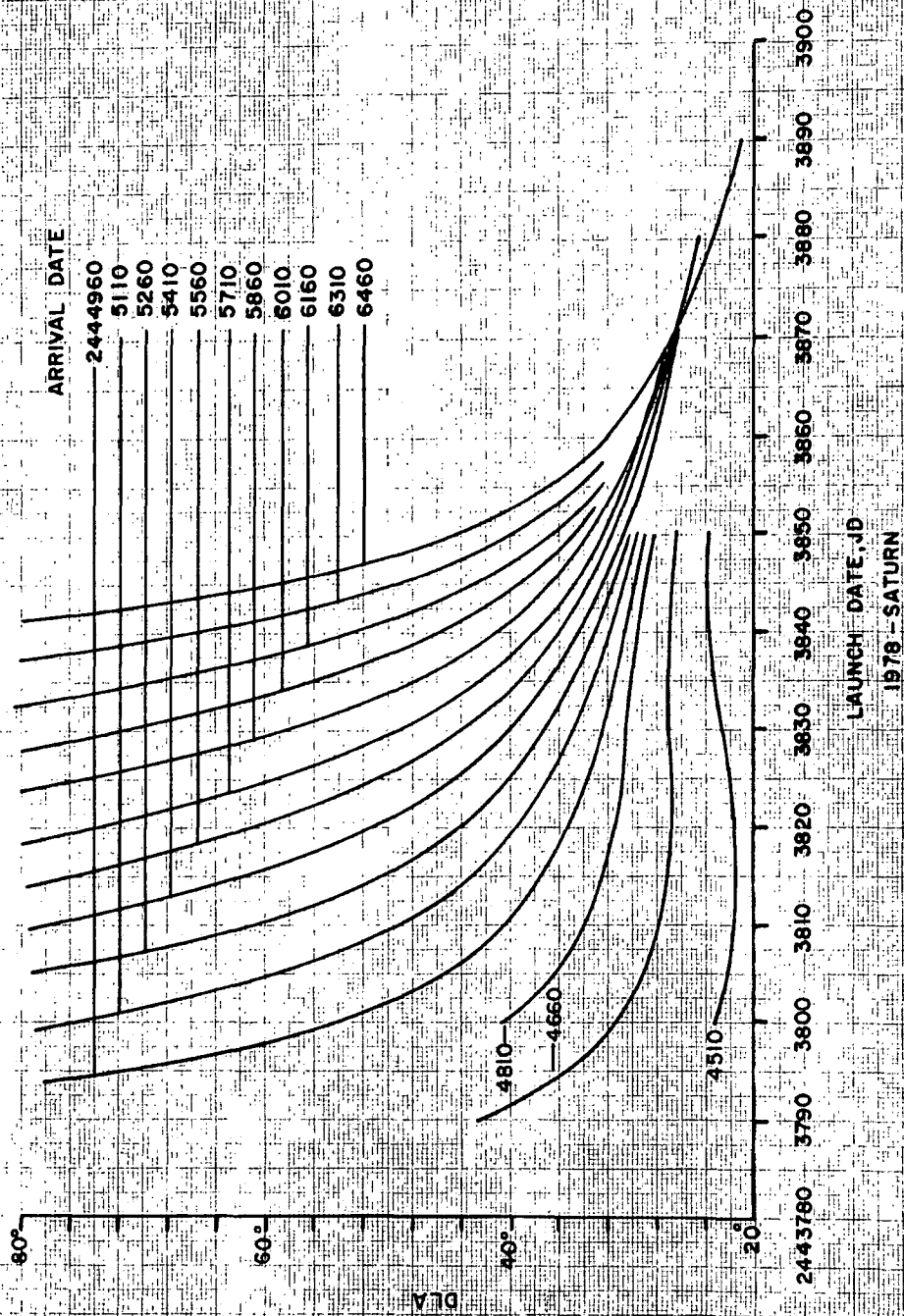


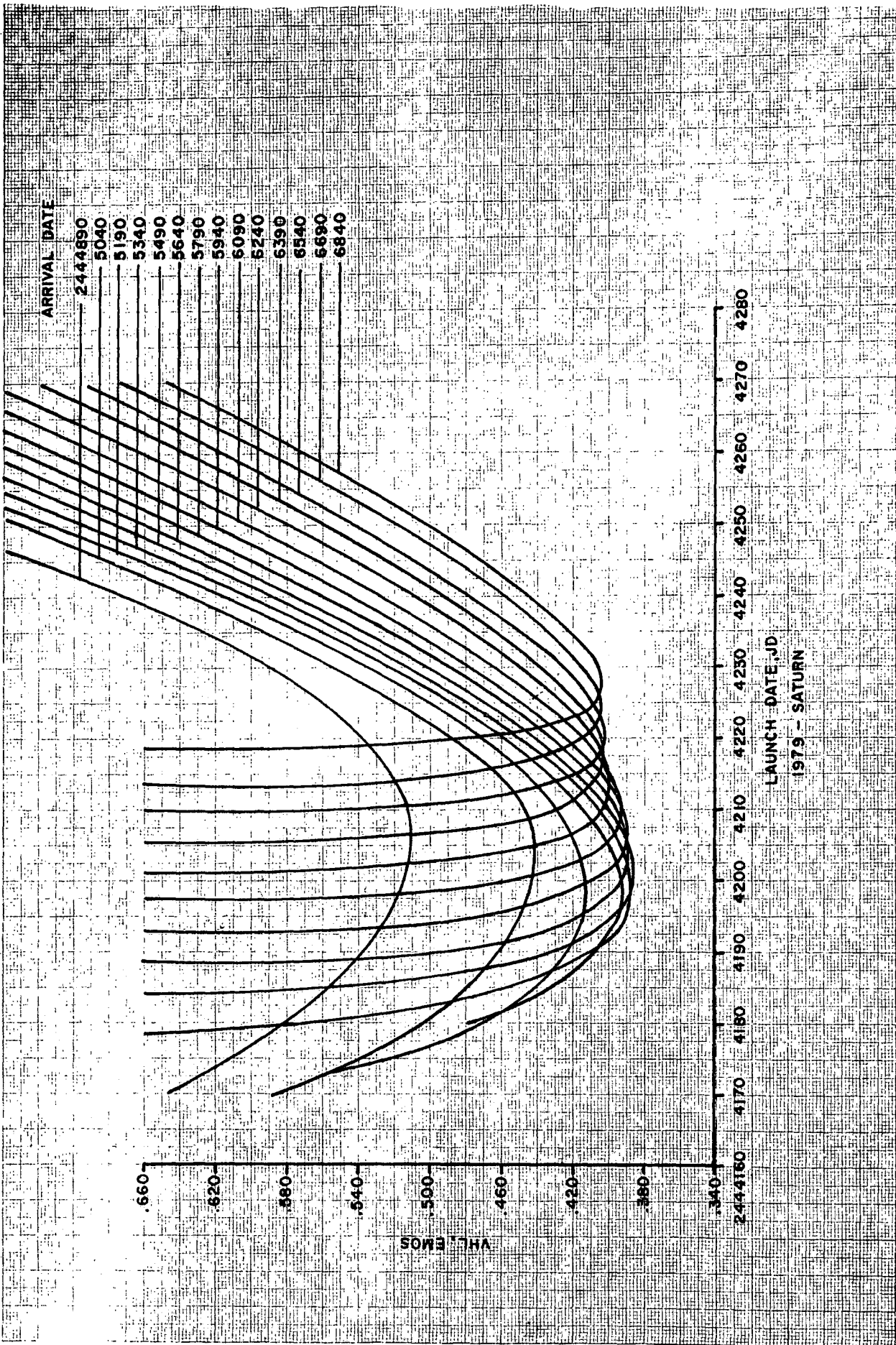


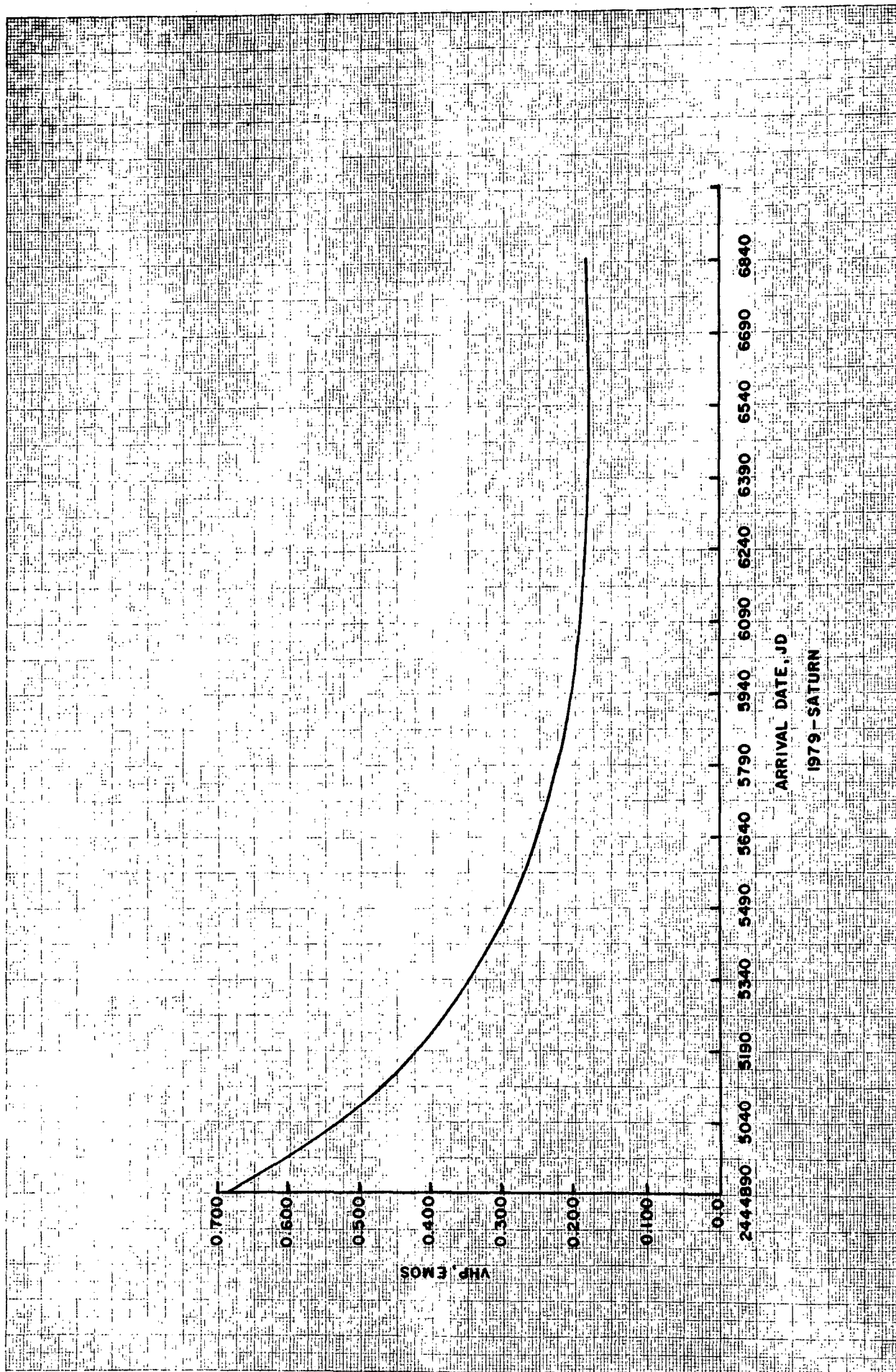


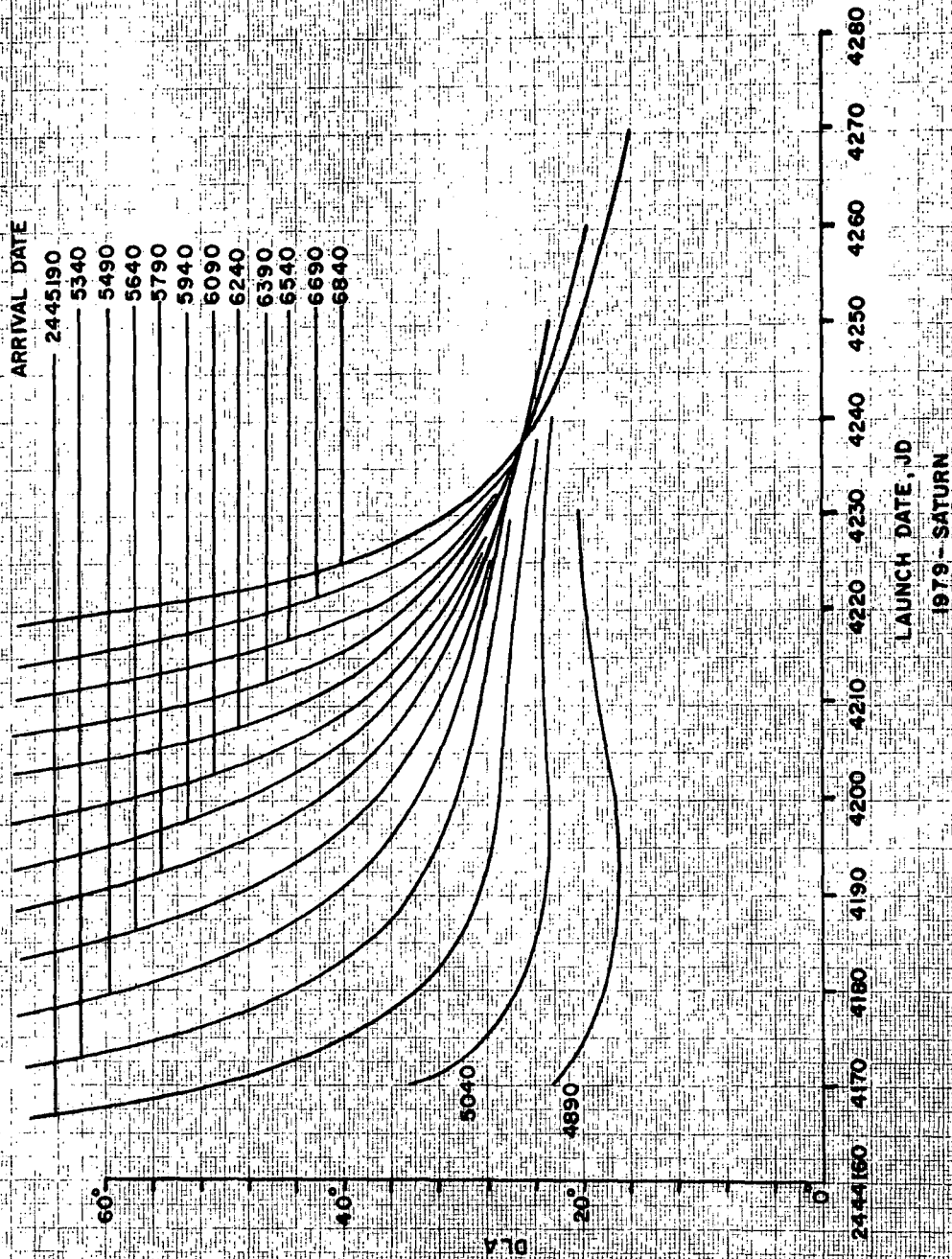


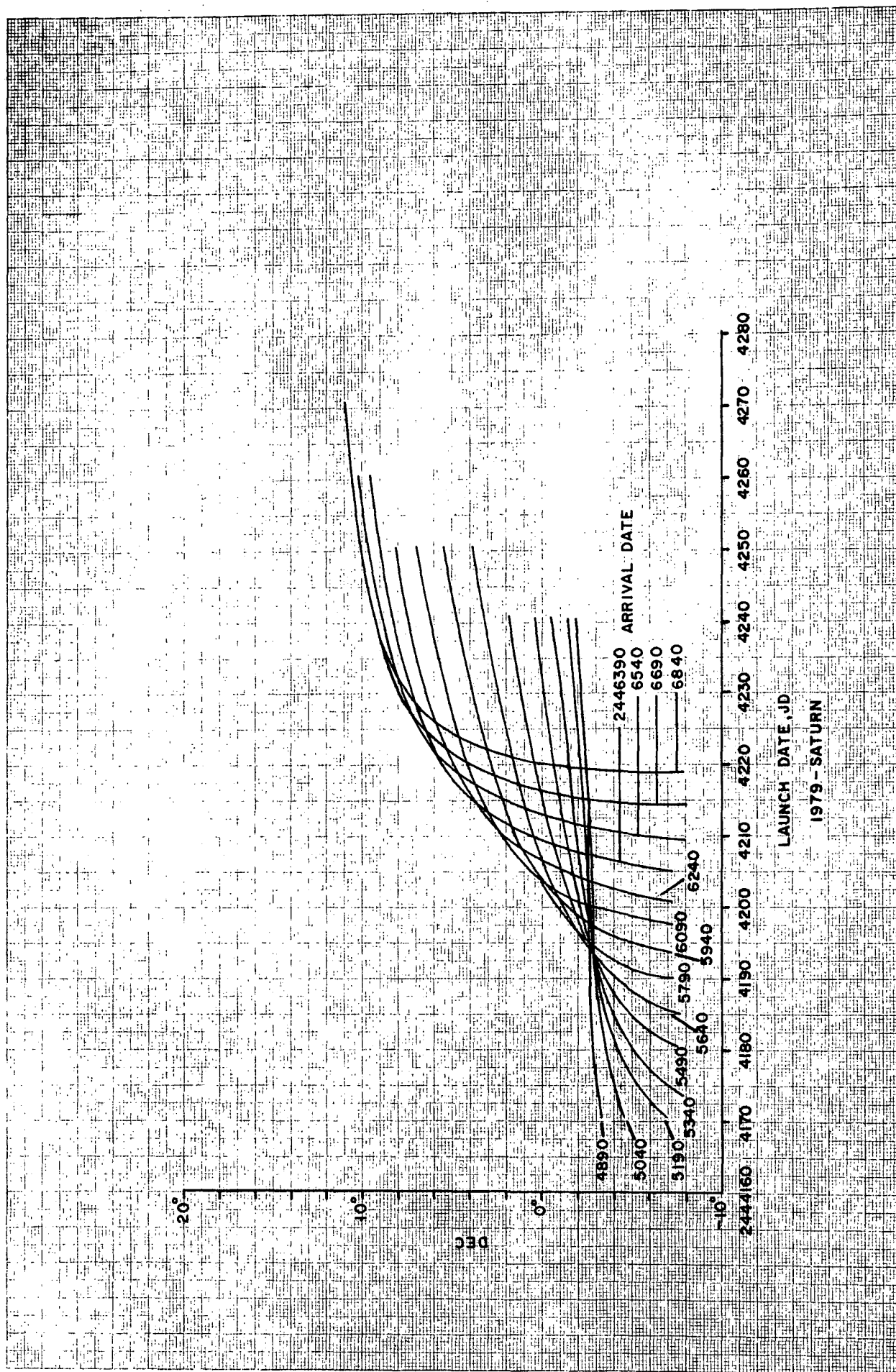


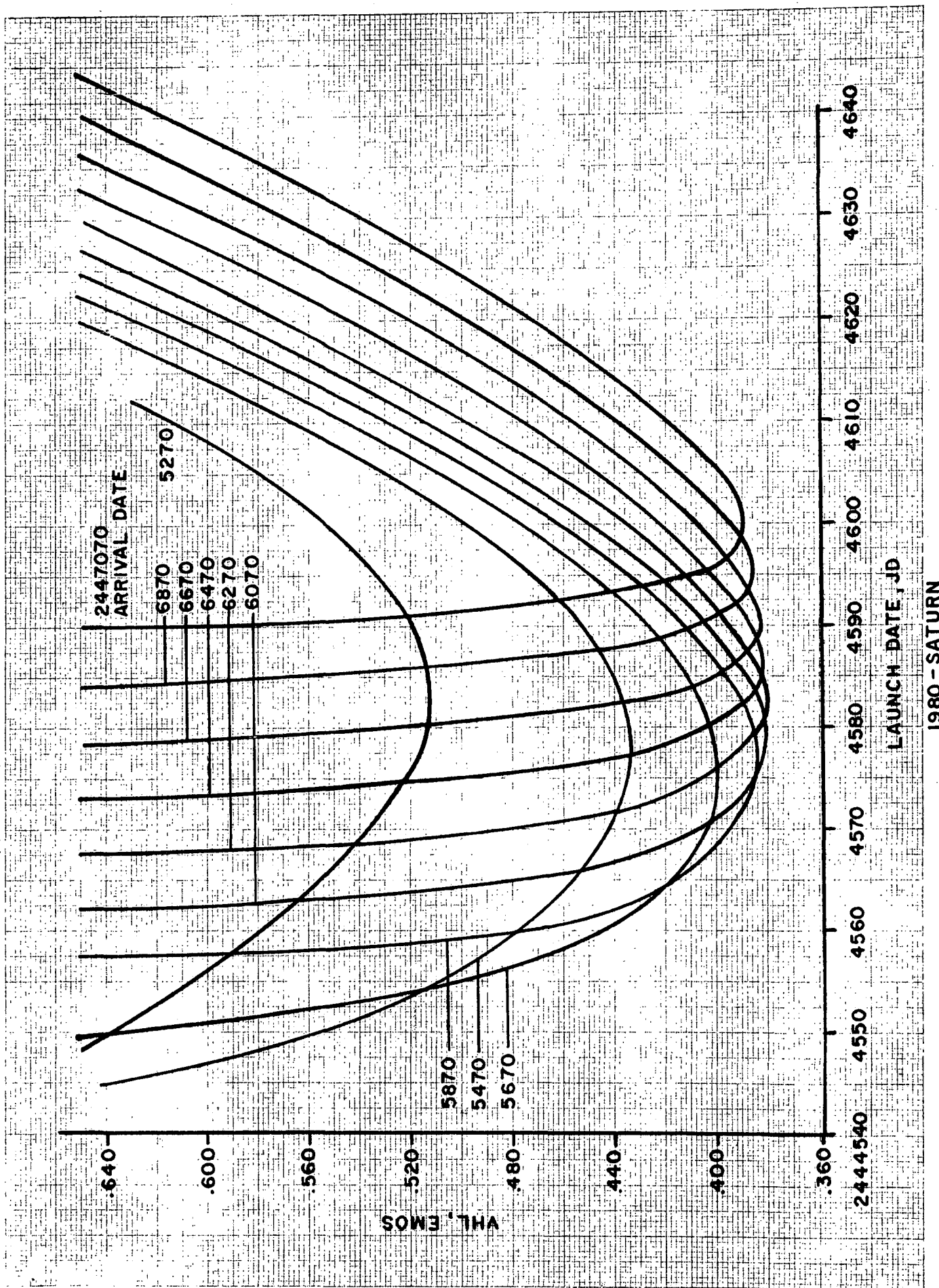


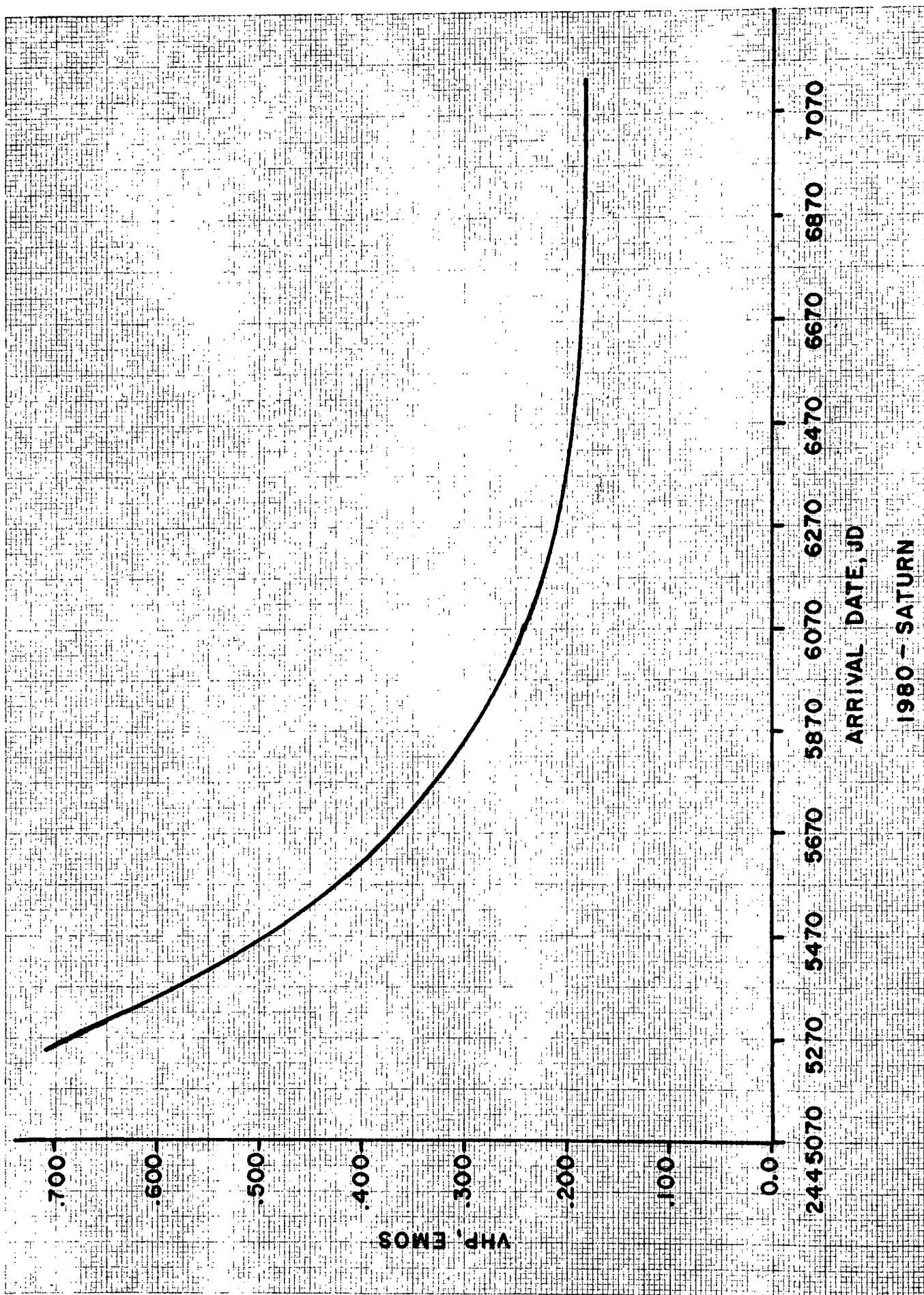


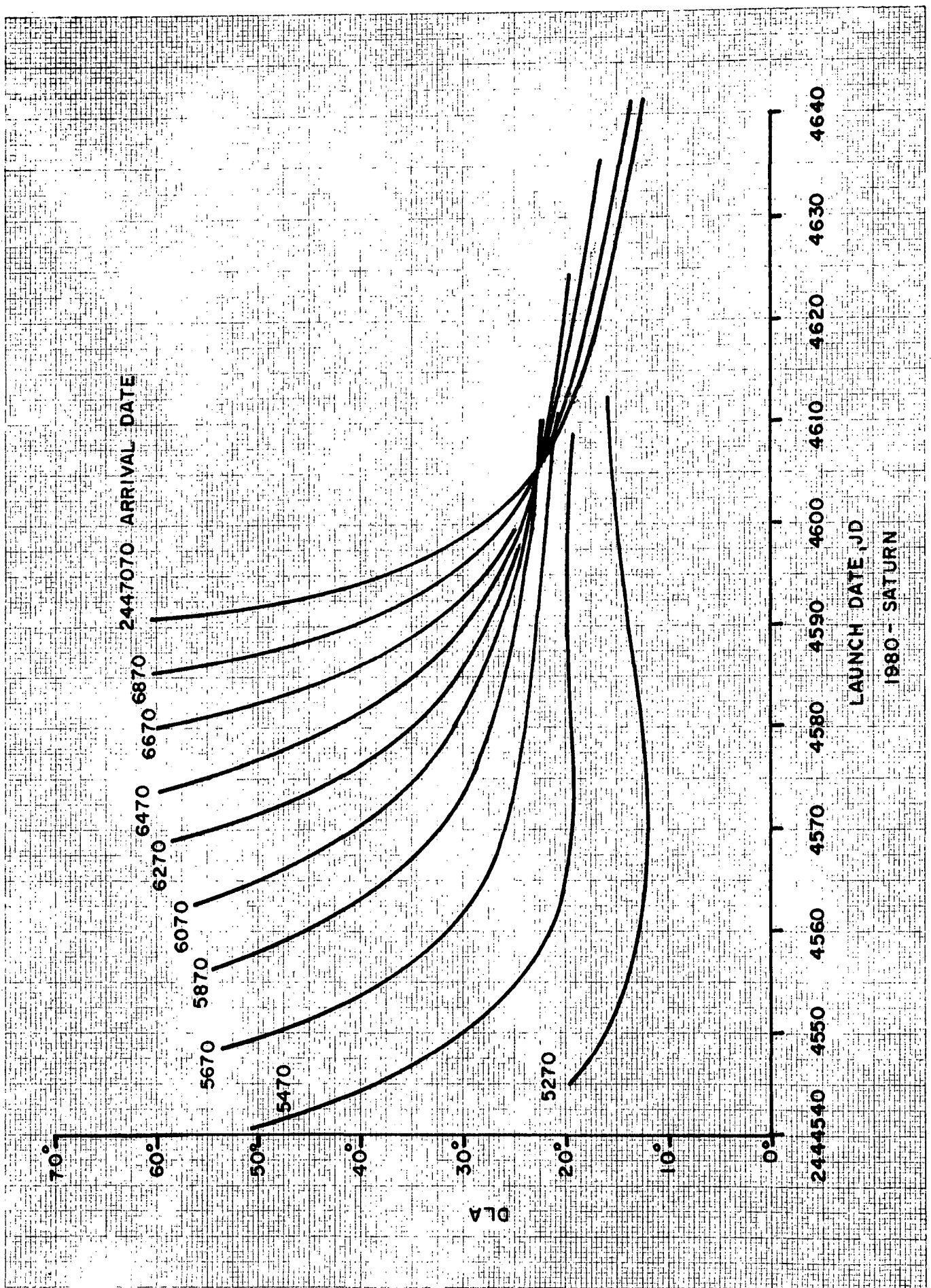


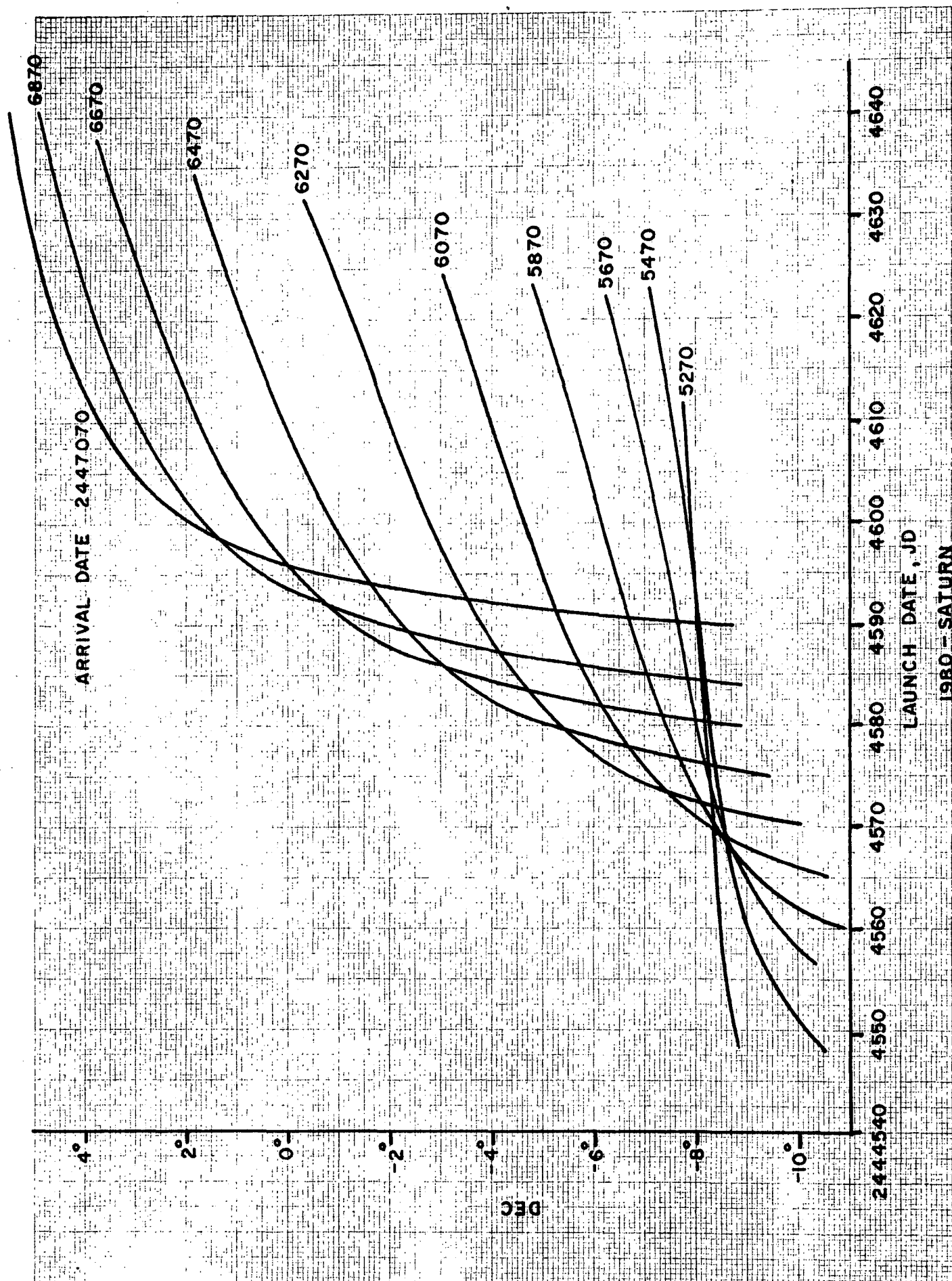


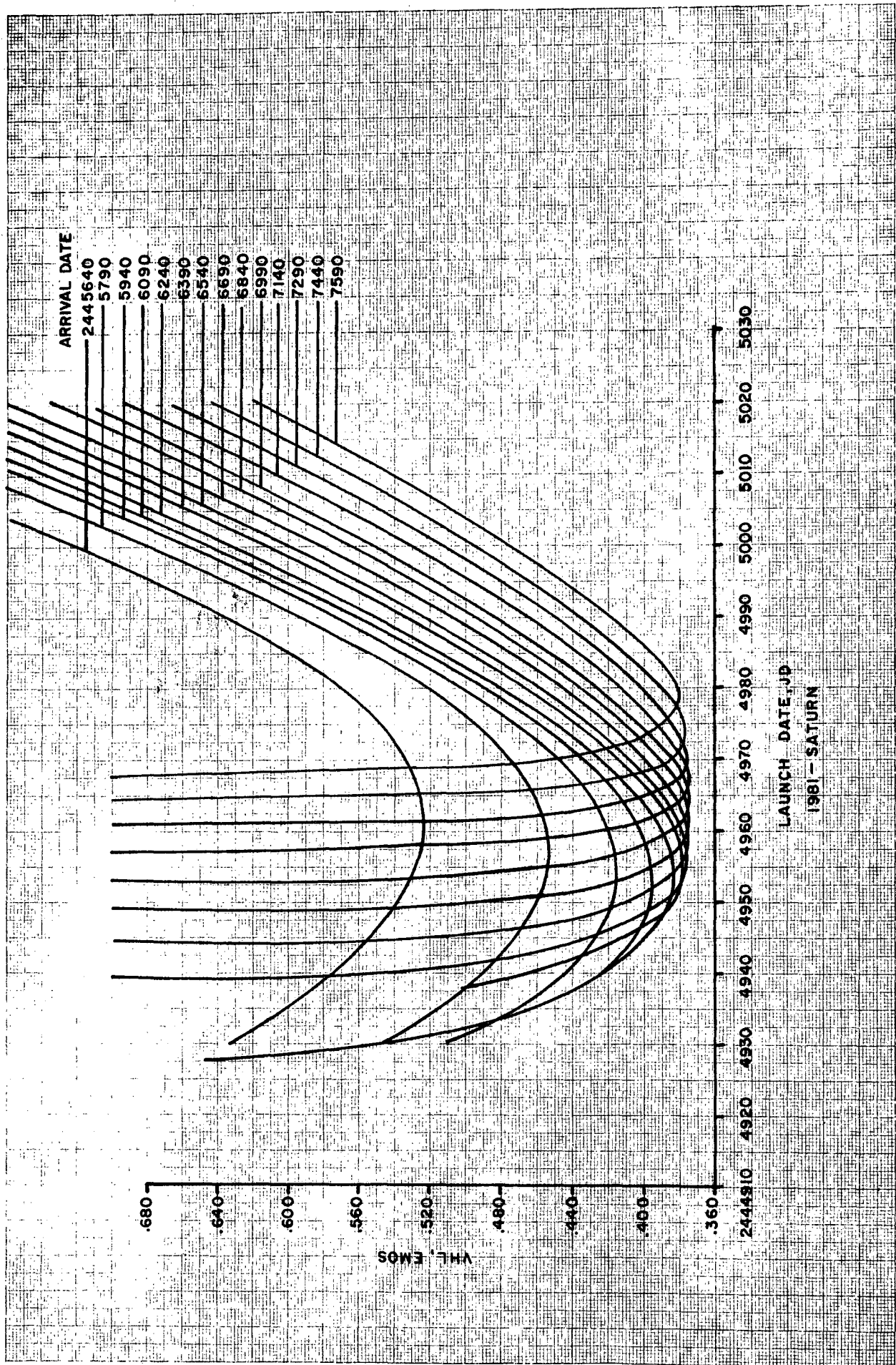


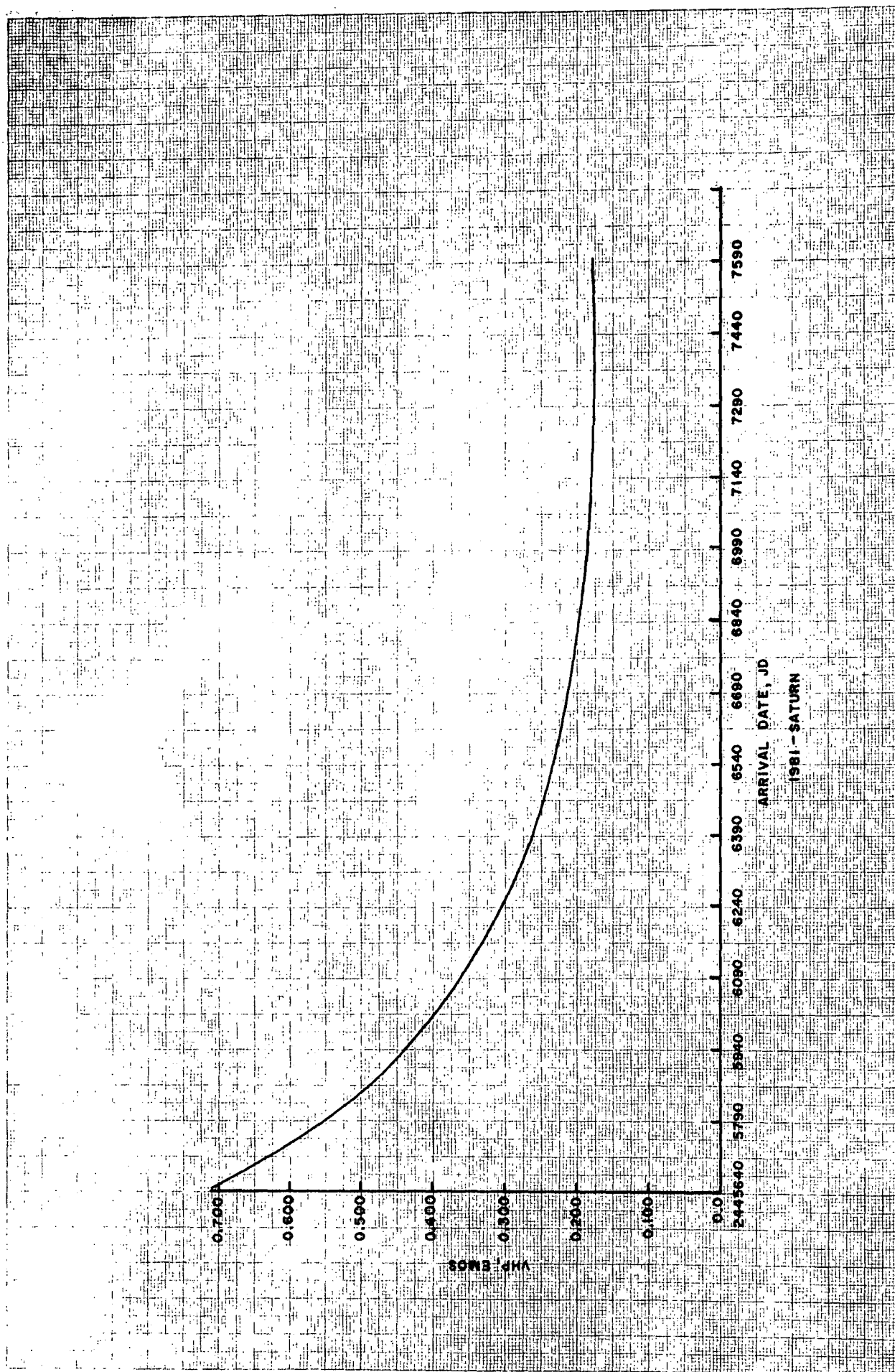


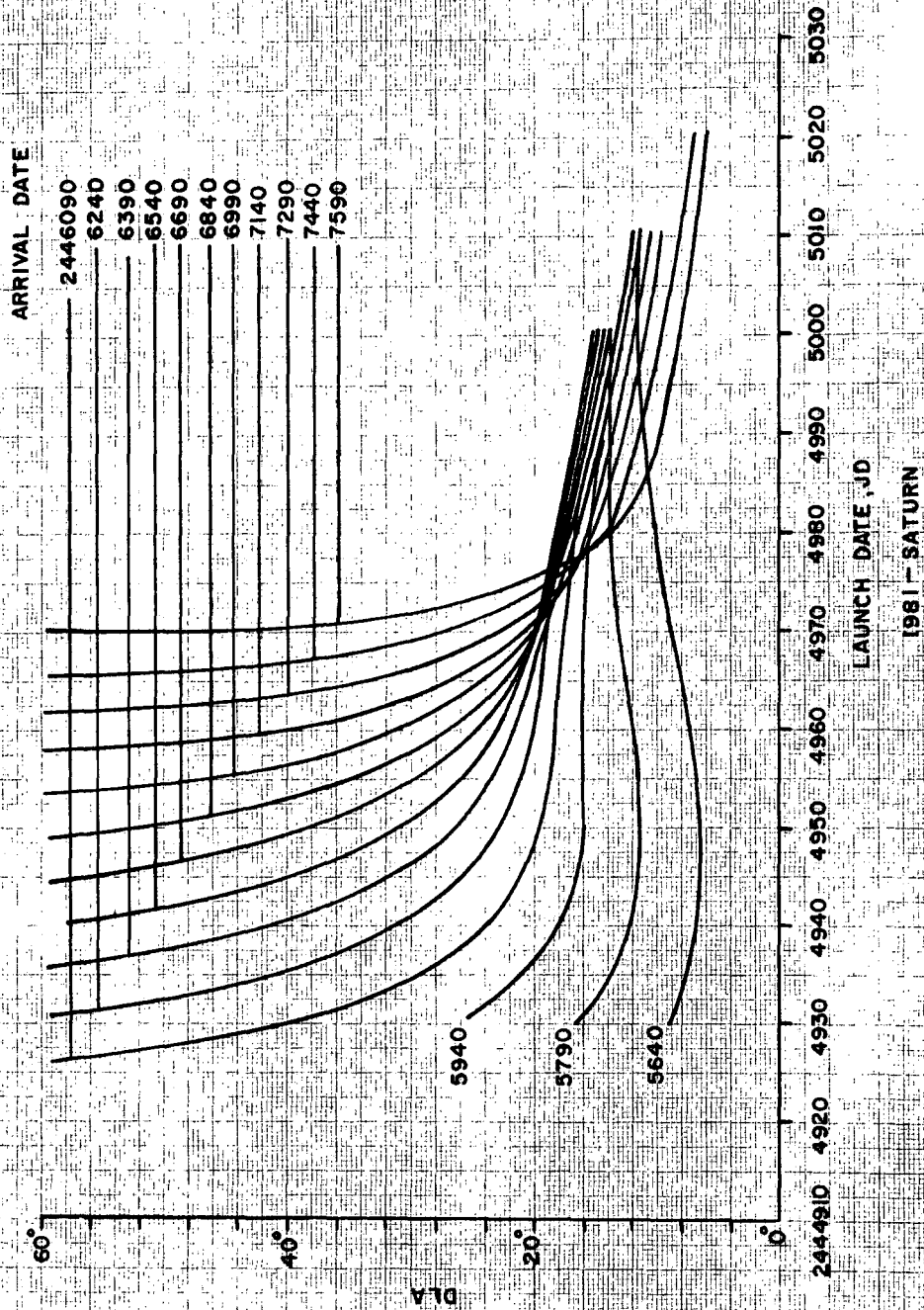


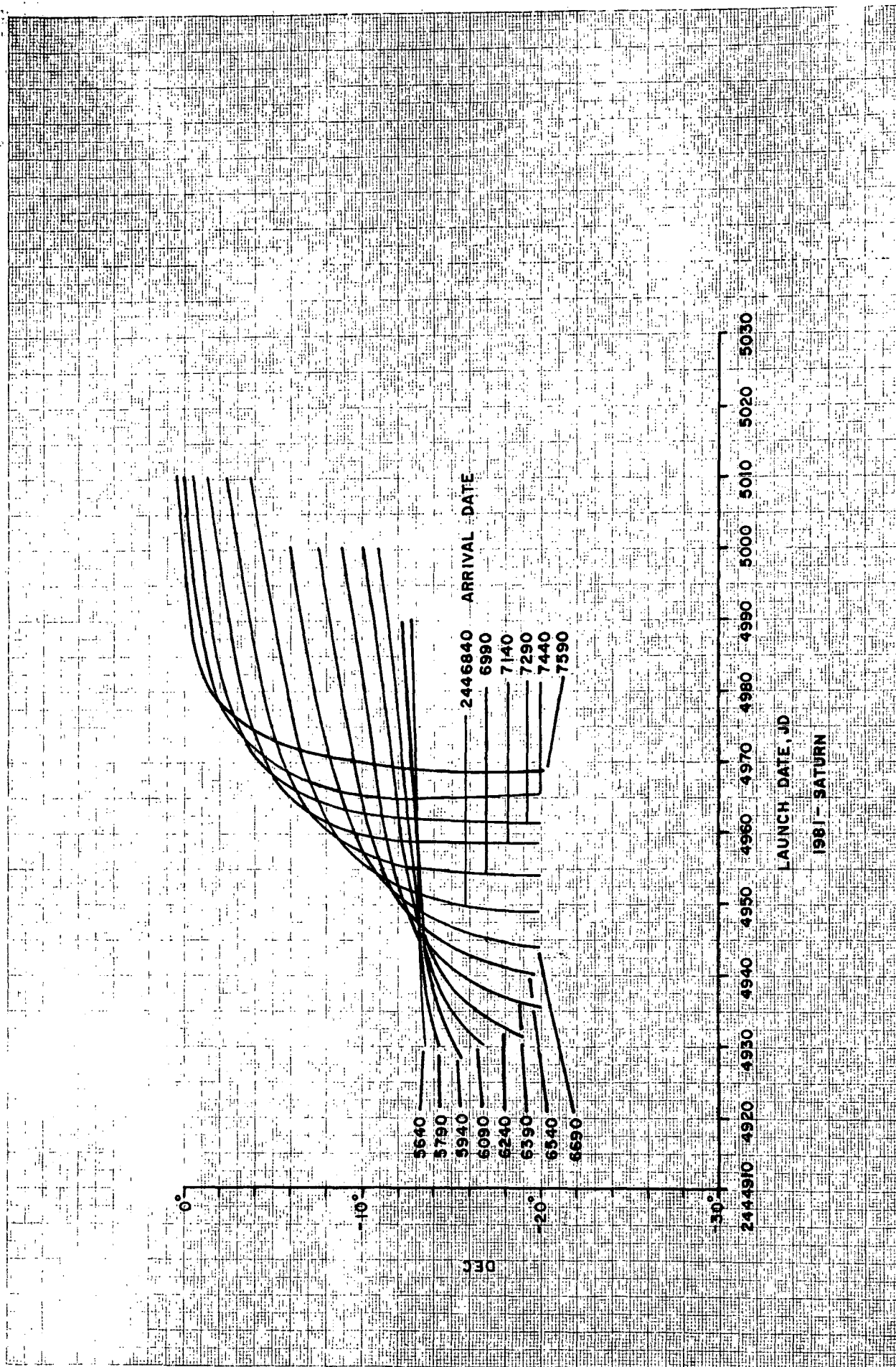


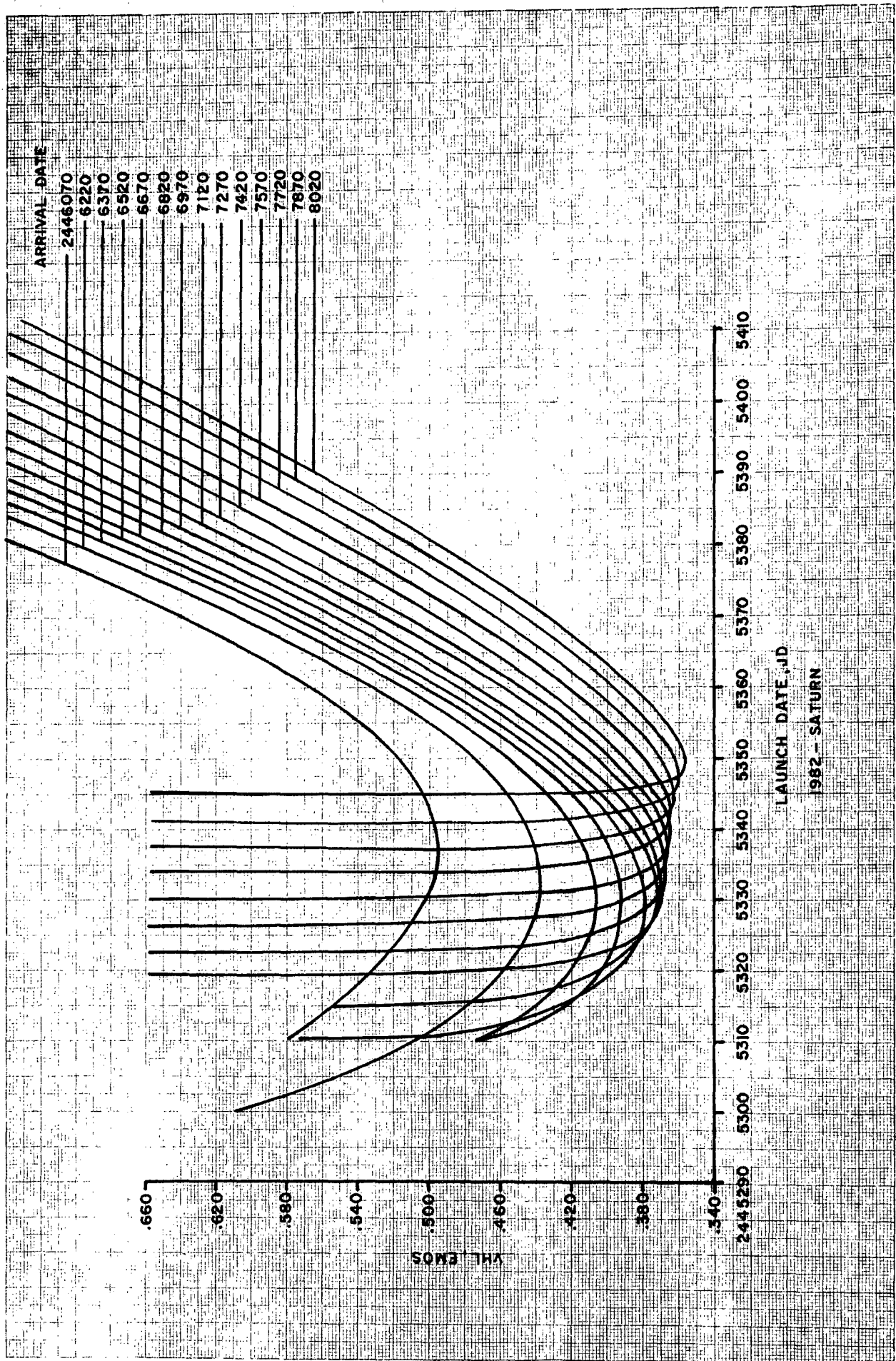


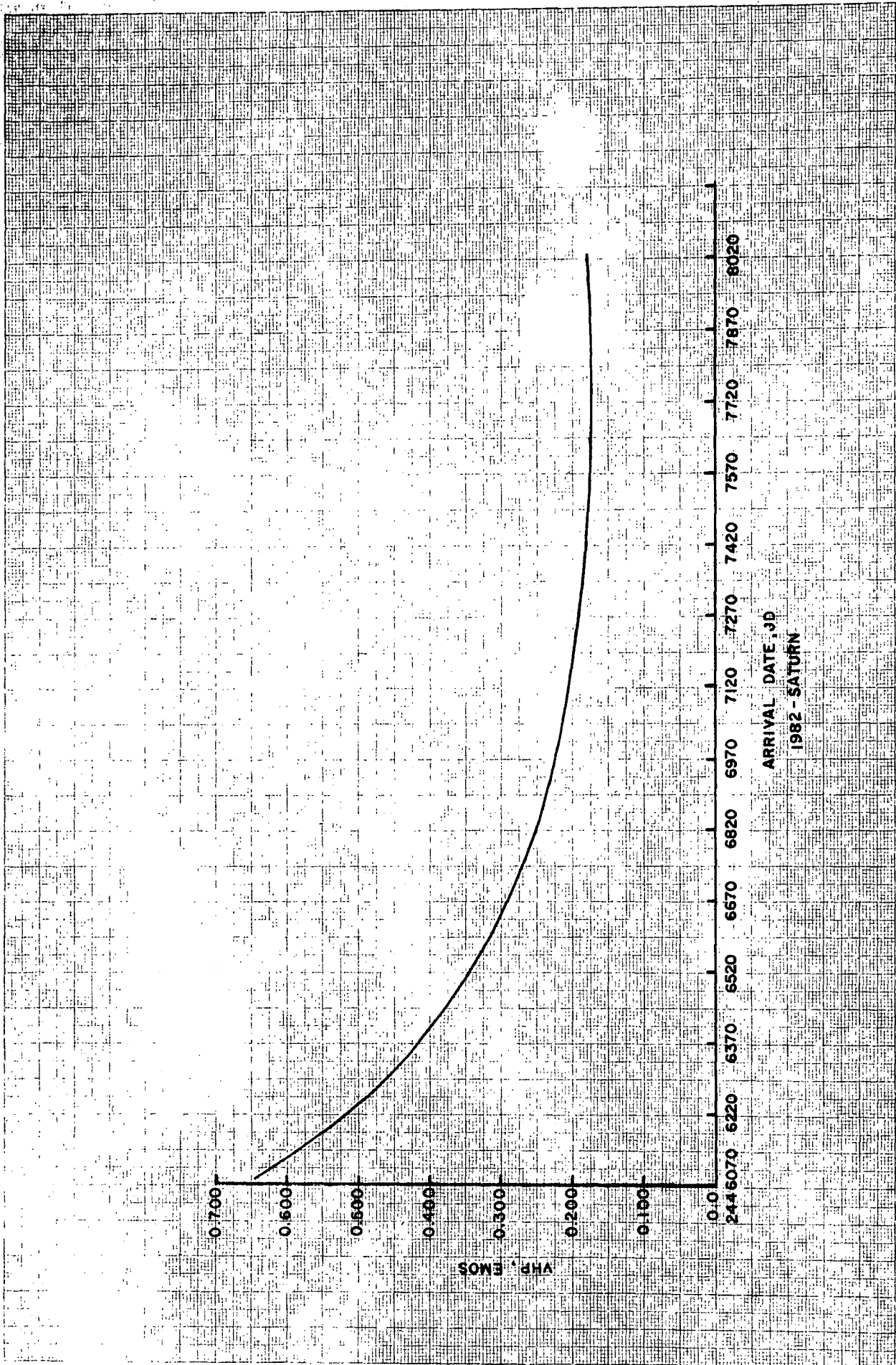


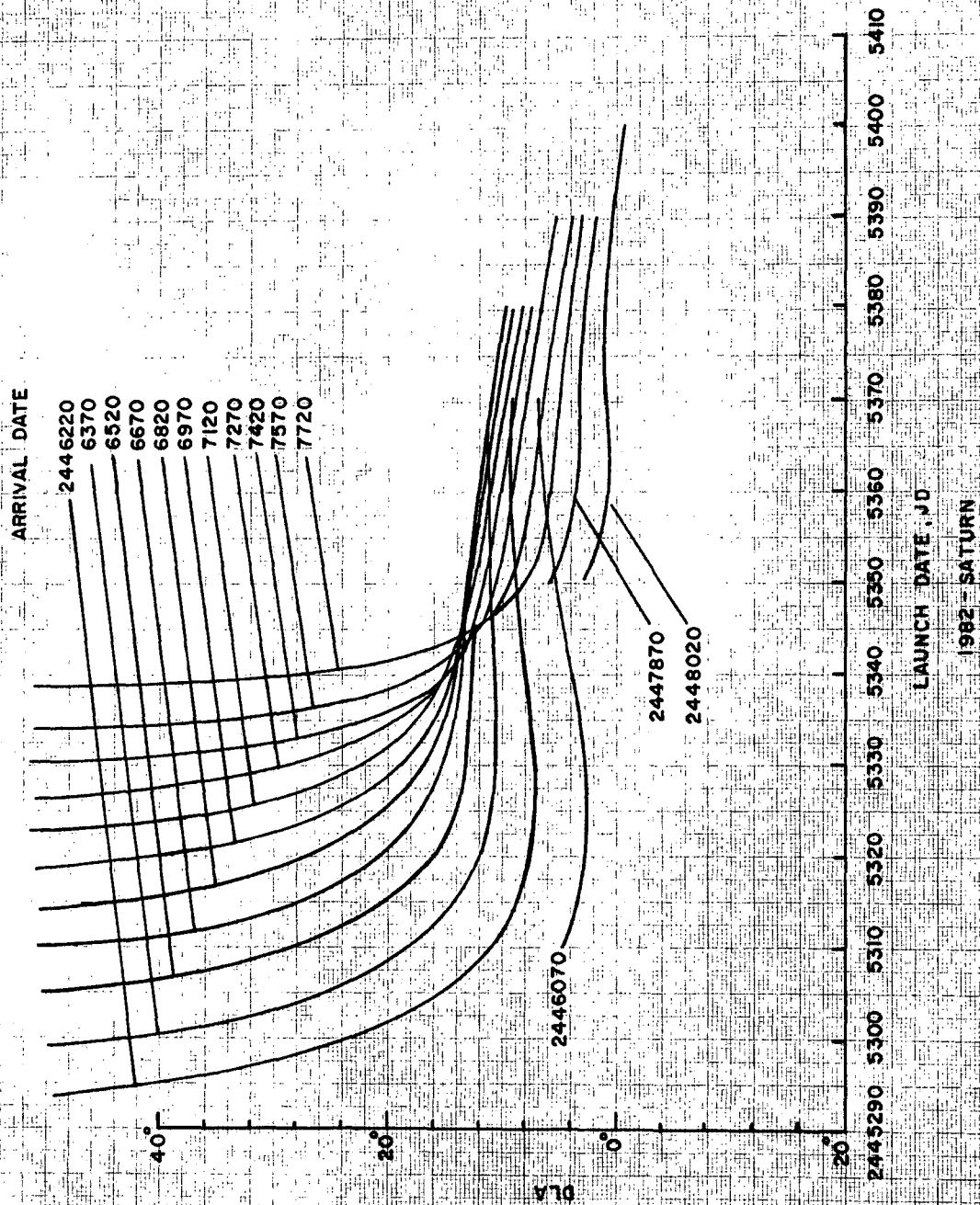


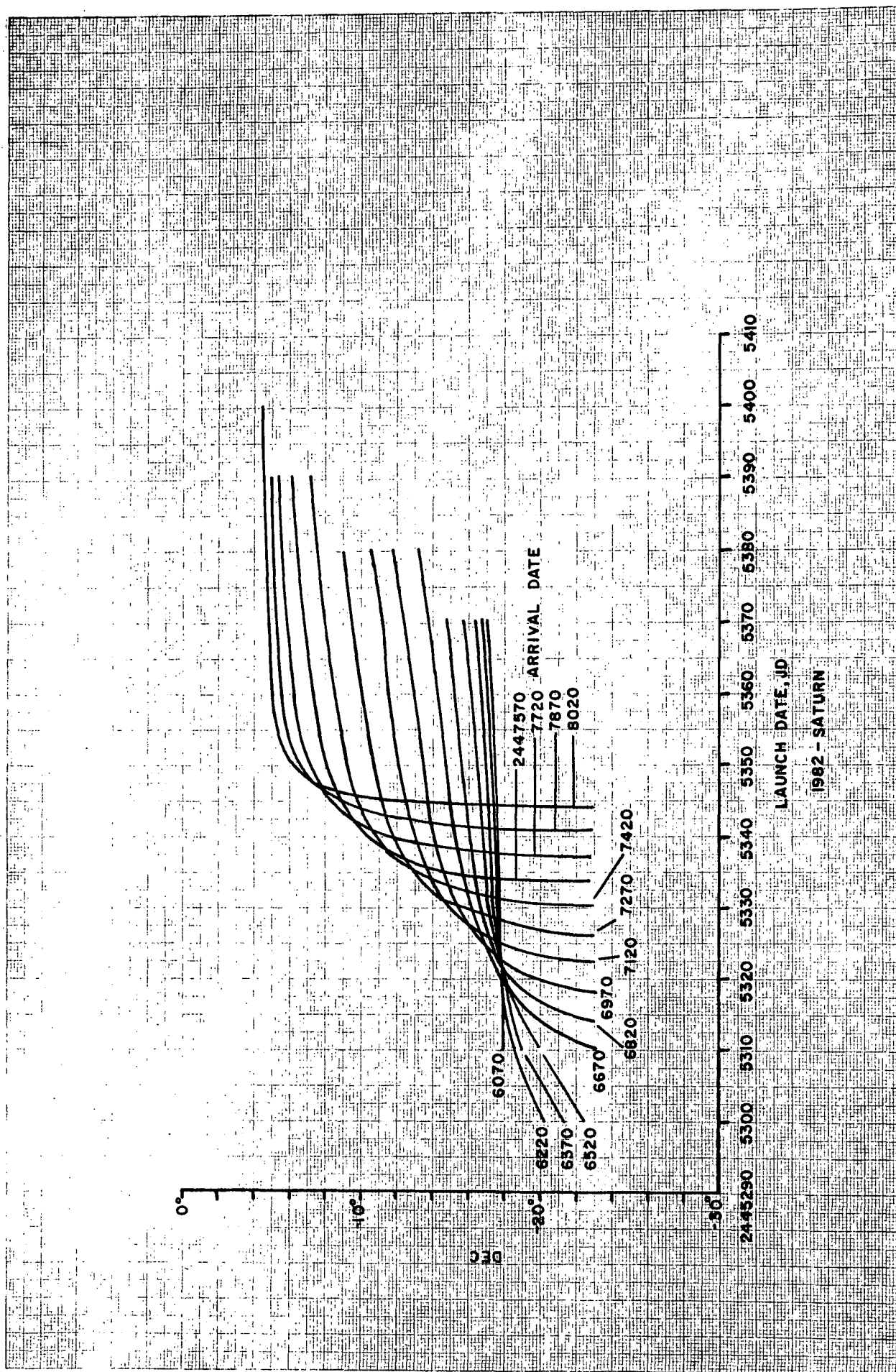


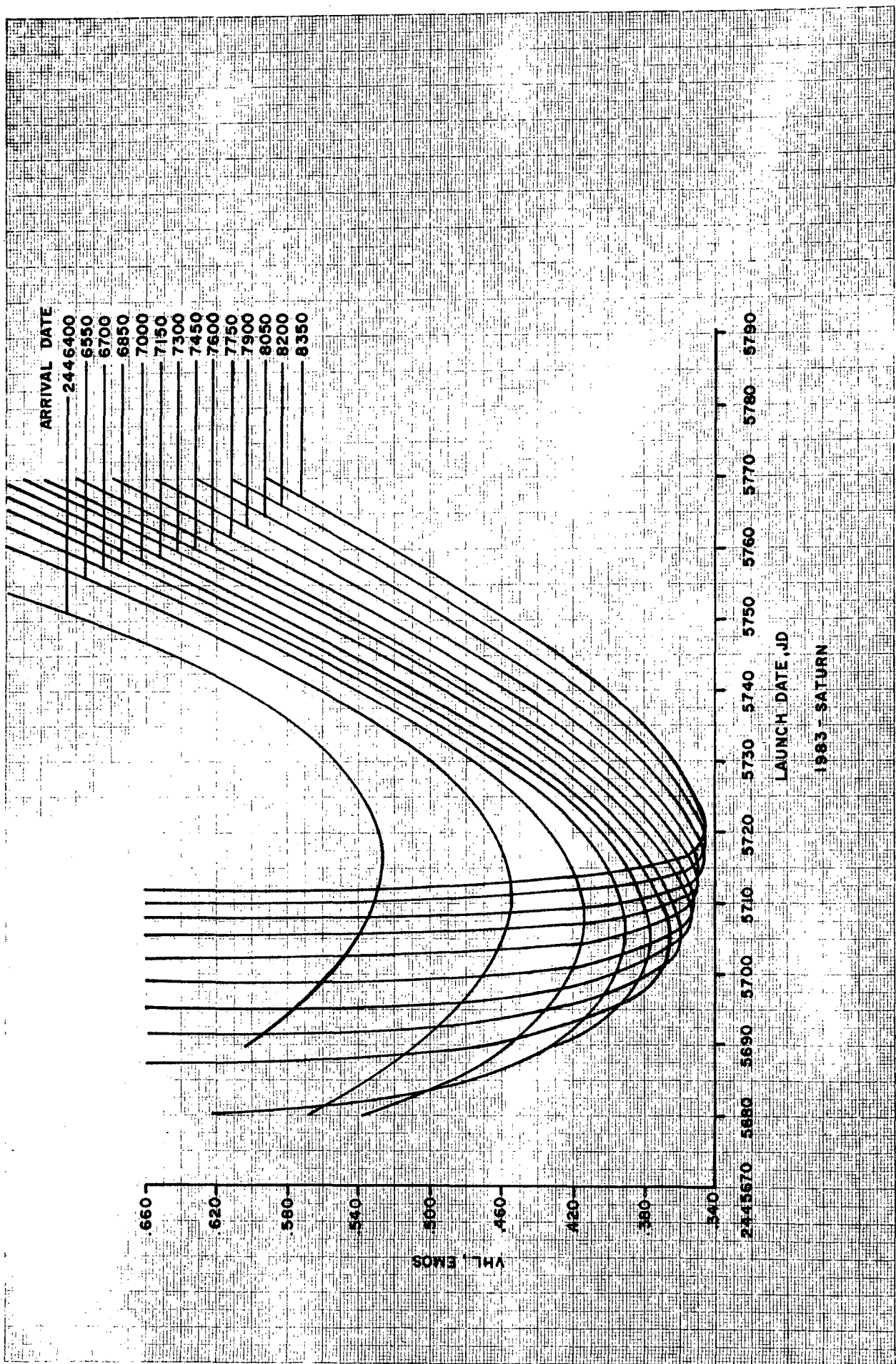


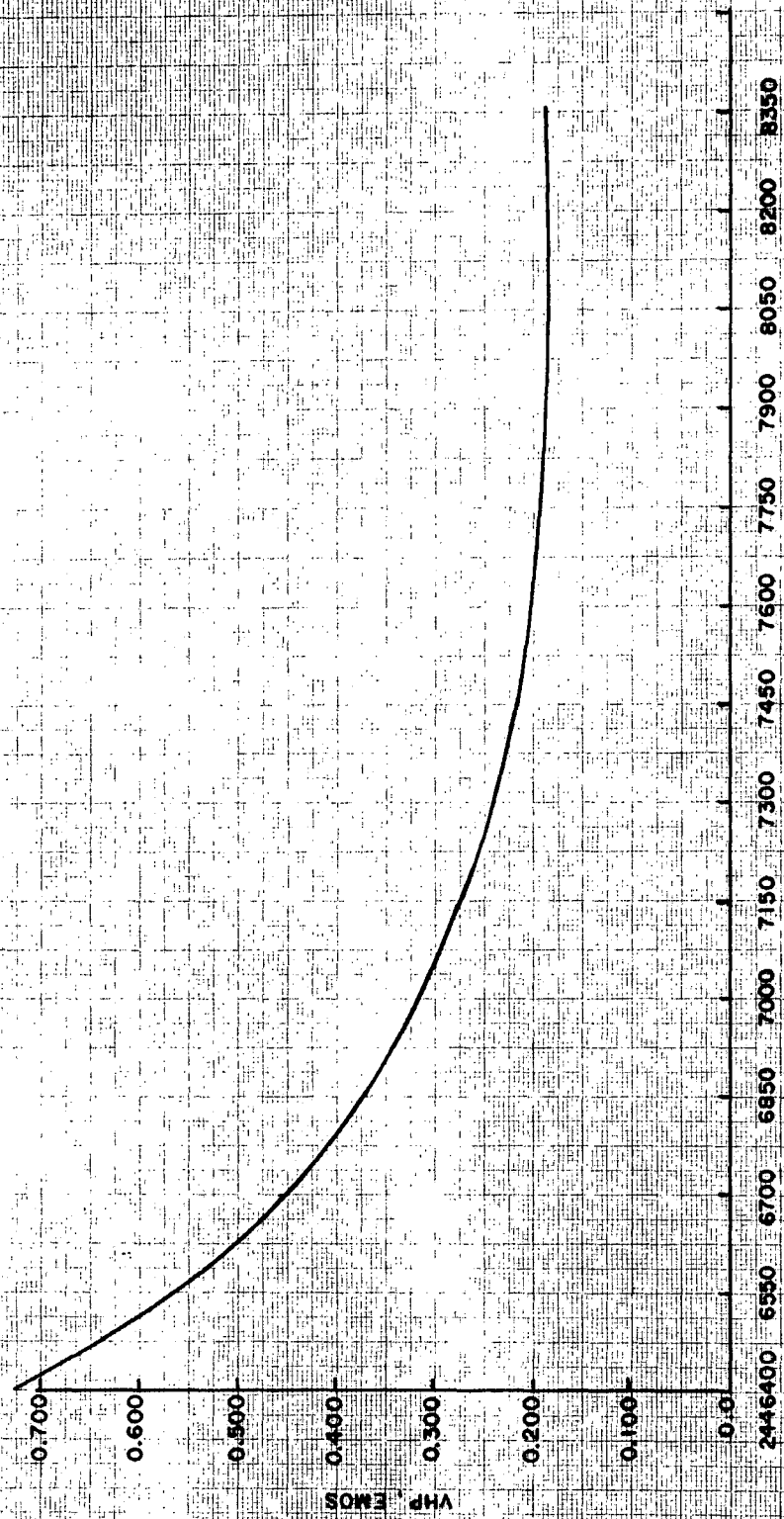












ARRIVAL DATE, JD
1983 - SATURN

